LINCOLN UNIVERSITY
Centre for Land, Environment & People

LEAP Research Report
No. 51

The implications of increases in tourism on local users of nature-based recreation settings in the Selwyn District, New Zealand

A review of the literature and selected research methods

Megan Apse
Stephen Espiner
Emma J. Stewart

April 2020

Centre of Excellence: Sustainable Tourism for Regions, Landscapes and Communities

LEAP

The implications of increases in tourism on local users of nature-based recreation settings in the Selwyn District, New Zealand: A review of the literature and selected research methods

Megan Apse
Stephen Espiner
Emma J. Stewart

Land Environment and People Research

Report No. 51

April 2020

ISSN 1172-0859 (Print)

ISSN 1172-0891 (PDF)

ISBN 978-0-86476-452-2 (Print)

ISBN 978-0-86476-453-9 (PDF)

Lincoln University, Canterbury, New Zealand

Acknowledgements

The authors are grateful to the following people and organisations for their assistance in the production of this report. The Selwyn District Council, in particular Derek Hayes; the Department of Conservation, in particular Jeff Dalley; Lincoln University Centre of Excellence- Sustainable Tourism for Regions Landscapes and Communities; and, the New Zealand Transport Agency/Waka Kotahi.

Note

This publication is the first of three reports that address the implications of increases in tourism on local users of nature-based recreation settings in the Selwyn District, New Zealand and is intended to be read in conjunction with the two which follow. The second report outlines the perspectives of a selected group of key informants and the third report examines the issue with data gathered from an online survey of recreationists active in the Selwyn District.

Recommended citation:

Apse, M., Espiner, S., & Stewart, E. J. (2020). *The implications of increases in tourism on users of nature-based recreation settings in the Selwyn District, New Zealand: A literature review*. (LEAP Research Report No.51), New Zealand, Lincoln University.

Contact details:

Megan Apse: Megan.Apse@lincolnuni.ac.nz

Stephen Espiner: Stephen.Espiner@lincoln.ac.nz

Emma J. Stewart: Emma.Stewart@lincoln.ac.nz

Cover image by Emma J. Stewart (2020)

Contents

1. Introduction 1
2. Literature search methods 2
3. Tourism and recreation 4
3.1 Recreation displacement, conflict, and crowding 6
3.2 International research 7
3.3 New Zealand research 10
4. Selected methods of relevance 15
5. The study area: The Selwyn District 18
5.1 The Selwyn District 18
5.2 Tourism and recreation in the Selwyn District 21
5.3 Communities of interest 28
6. Conclusion 30
Appendices 31
Appendix 1: Domestic and international tourism expenditure in New Zealand 31
Appendix 2: Clubs and community groups involved in outdoor recreation in Selwyn 32
Appendix 3: Free or cheap camping sites in the Selwyn District 34
Appendix 4: Selwyn geocache locations 35
Appendix 5: Craigieburn Forest Park public access areas and campsites/huts 36
References 37

List of Figures and Tables

Figure 1. International visitor arrivals 1979-2018, forecast arrivals 2019-2025 4
Figure 2. The Selwyn District: Boundary, towns and roads 19
Figure 3. Selwyn public access areas and popular recreation places 20
Figure 4 Arthur's Pass average daily vehicle numbers 2011-2015 22
Figure 5. Average daily vehicle numbers Arthur's Pass, 2009-2018 23
Figure 6. Tourism expenditure in Selwyn 23
Figure 7. Visitors use of freedom camping) 24
Figure 8. Visitors to NZ, recreation activities 27
Figure 9. Selwyn and surrounds hunting and fishing access 29

Table 1. Visitor/user group identification 13
Table 2. Selwyn District recreation sites and activities 26

1. Introduction

A sustainable tourism industry has been characterised by Lankford, Pfister, Knowles, and Williams (2003) as a "planning approach that considers the economic, social, and ecological implications of tourism and recreation development". Previously, the economic and environmental impacts of tourism have been prioritised, and hence, are well-researched (Ryan, 1991); however, in order to plan for a tourism industry that continues to have value, more must be learned about the social impacts. This was understood in New Zealand as far back as 1997, when a parliamentary enquiry noted there was "little clear understanding of the perceptions and values of the general public and of specific communities regarding tourism and its effects" (Parliamentary Commissioner for the Environment, 1997, p. 114). More recently, Lankford et al. (2003) emphasised that little is known about the ways in which tourism impacts on "the types of outdoor recreation preferences, experiences, and behaviours" (p. 30) of residents.

This literature review reports on the ways in which domestic and local users of nature-based settings (for recreation) respond to increasing tourism. The term 'traditional recreationist' is used throughout the report to refer to those with a reasonable claim to ready and historic or ongoing access to nature-based recreation places. As these users may be local, and are likely to be New Zealand citizens, the report also uses the terms 'usual users' and 'local users'. The term 'nature-based settings' is used to describe natural or remote areas in which outdoor recreation activities take place. Although distinctions can (and have been) made between 'wilderness', 'nature', and 'the outdoors', the terms are frequently used interchangeably in recreation literature (Cosgriff, Little, & Wilson, 2009). In this paper, we use the phrase 'nature-based setting' to refer to the non-built or undeveloped environment; this is inclusive of both modified land (such as agricultural, or vegetated land) and, such that it exists, unmodified land (such as alpine areas).

The issue of how tourism impacts on the usual users of nature-based recreation places is first explored at a broad conceptual level. Following this, examples of literature from international nature-based tourism destinations are described; next, national and regional examples are outlined. Finally, specific attention is directed to the Selwyn District in Canterbury, of interest as a region comprising a variety of nature-based recreation sites from coastal to mountain zones, and one striving to increase tourism numbers (Selwyn District Council, 2019).

2. Literature search methods

The literature reported in this review was selected from a range of sources. In keeping with the aim of the document, that is, to examine the issue of how increases in tourism affect the experience of nature-based recreationists, the literature on both tourism and recreation were searched. The following types of literature were accessed:

- Academic research,
- Conference proceedings,
- Published and unpublished post-graduate theses,
- Government reports, documents and websites,
- Local government strategy documents,
- DOC strategy documents, pamphlets, research and websites,
- Tourism and travel databases.

The literature search focussed on recreation and tourism themes (both internationally and within New Zealand). Key recreation themes were searched alongside key terms such as tourism, visitor numbers, social impacts, displacement, crowding, resident attitudes, and others. Because of the focus on nature-based settings, literature using the terms wilderness, eco, backcountry, rural and outdoor were searched. Much of this research was academic and was found using academic databases such as Google Scholar, and the Lincoln University Library catalogue. It included searching author names and the reference lists of papers for any related works.

The search went on to focus on the Selwyn District, where examining local government webpages, regional statistics and places of tourism/recreation interest within Selwyn garnered information. As Clough (2013) noted, the range of recreation activities undertaken in nature-based settings is vast and not administered by one association or authority; consequently, a variety of sources were consulted to ensure sufficient coverage of the issues.

Researching recreational communities of interest helped to identify relevant information. Note that in the literature, the term ‘communities’ almost always refers to fixed or built communities, such as towns or settlements. This paper also considers communities as groups of people who have a common interest in a recreational activity. Recreation search terms included, but were not limited to, clubs or activities operating in Selwyn associated with walking, hiking, tramping, mountain biking, orienteering, rogaining, geocaching, cycling, fishing, angling, kayaking, rafting, rock-climbing, bouldering, alpine climbing/mountaineering, skiing, hunting (itself able to be broken into the following categories: big game hunting, game bird hunting, pig hunting, alpine hunting, small game hunting, night hunting (New Zealand Mountain Safety Council, 2017)), and, camping. In addition,

following Burns, Arnberger, and von Ruschkowski (2010), sight-seeing and driving for pleasure were included due to the fact that these recreation activities, although passive, make use of the visual amenity of wilderness settings.

3. Tourism and recreation

Facilitating visits to nature-based settings has long been a goal of the Department of Conservation (DOC), whose remit for the management of public conservation lands and water includes to foster visits, including managing a range of recreational opportunities ("Conservation Act," 1987). However, DOC is now in a situation where it must manage the effects of the success of both its own operations, and the successful outcomes of international marketing campaigns promoting New Zealand as a tourist destination. Visitor numbers to DOC sites are now such that they require active management and resourcing, evident from the 2017 briefing paper for the incoming Minister of Conservation, which advocated for the need for "a coherent national visitor plan than [sic] anticipates and suitably resources increased visitor use of conservation areas" (NZ Conservation Authority, 2017). This tone acknowledges that social pressures can affect the conservation areas so popular for recreation.

New Zealand has been experiencing increasing numbers of international tourists for many years, with growth forecast to continue (see Figure 1, below). In addition, expenditure from domestic tourism is consistently greater than that of international tourists and has, too, been steadily increasing (see Appendix 1). However, recent concerns about tourist numbers and negative impacts on popular destinations has been much-discussed in international as well as local media (Roy, 2019).

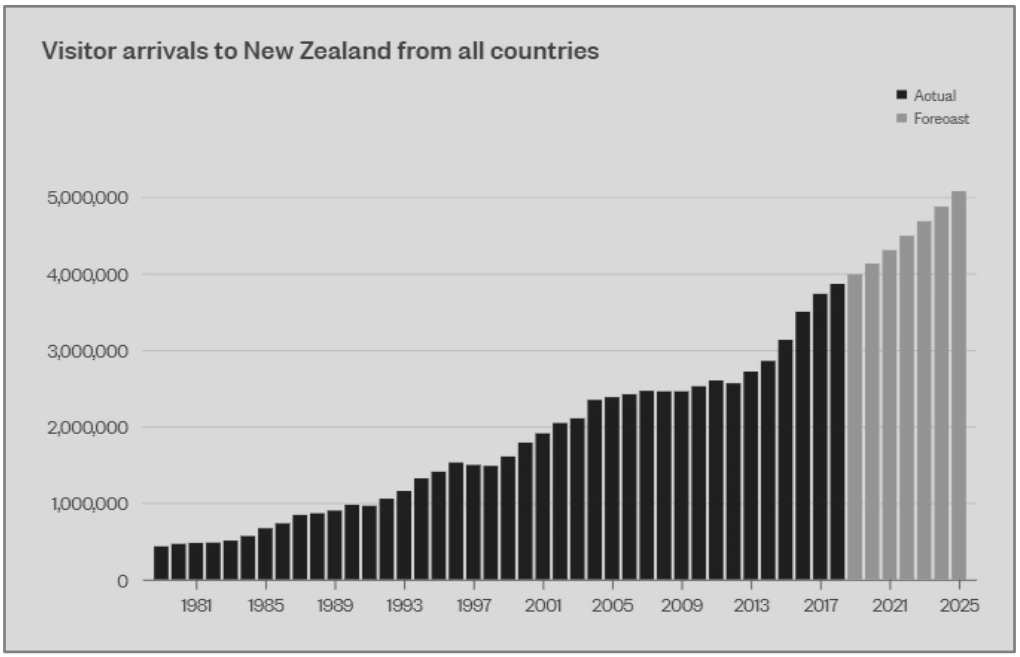


Figure 1. International visitor arrivals 1979-2018, forecast arrivals 2019-2025 (source: Figure.nz, 2019)

In spite of this, the impact of tourism on recreation places has not been a notable feature of media accounts or academic research. This is despite recognition that the social licence to operate (i.e., the receptiveness of 'locals' to tourism) forms a large part of the success of tourism, especially in rural areas (Tourism Industry Aotearoa, 2019).

The effects of tourism on local communities has often been researched in the context of assessing residential reactions to visitors (e.g., Wilson and Mackay (2015)). Various findings have reported that residents view tourism positively, negatively, indifferently, or have mixed feelings according to a number of variables, including the following: residence in rural areas (Allen, Hafer, Long, & Perdue, 1993; Mason & Cheyne, 2000); residence in urban areas (Faulkner & Tideswell, 1997); proximity to tourism activities (Jurowski & Gursoy, 2004); impression of the economic benefits to an individual or area (McGehee & Andereck, 2004); place attachment (Budruk, Stanis, Schneider, & Heisey, 2008; Budruk, Wilhelm Stanis, Schneider, & Anderson, 2011; McCool & Martin, 1994); and, size of community and the level of existing tourism development there (Mason & Cheyne, 2000; Tovar & Lockwood, 2008).

What little research there is addressing the issue of how the usual users of nature-based settings for recreation have reacted to increasing tourist numbers tends to be either speculative in nature, or, approaches the topic tangentially. The work of Lankford et al. (2003), for example, claims to be the first within tourism impact or sustainable tourism literature to address "recreational opportunities and experiences with regard to tourism development" (p. 44). The research found that concerns of Hawaiian residents regarding tourism development's influence on recreation were based around several specific impacts. It did not explicate these, although the authors did postulate that one reason for residents' reticence about tourism development was their fear of losing access to recreation areas.

Similarly, Jurowski and Gursoy's (2004) research found that increased proximity to recreation attractions in the U.S. state of Virginia resulted in increased negative perceptions of tourism. Their expectation was that resident aversion to tourism development arose from fears of being displaced from nearby recreation resources, yet, again, this was not explicitly shown by the research.

The most relevant literature to address the research questions at hand feature the concept of recreation displacement (Anderson & Brown, 1984) , defined by Greenaway, Cessford, and Leppens (2007) as a process whereby "outdoor recreationists who are repeat users of a place…change their use of that place over time due to some negative evaluation of changed local conditions" (p. 146). Because increased use of a recreation place has been shown to be a factor in displacement of

traditional users, and because increases in tourism are highly likely to result in increased use of nature-based recreation places, recreation displacement is a concept relevant to the current review.

3.1 Recreation displacement, conflict, and crowding

Recreation displacement is identified by Manning and Valliere (2001) alongside two other strategies occurring at the individual's cognitive level, which, collectively, are termed coping strategies. Schroeder and Fulton (2010) explains coping as adaptive reactions to discrepancies between what *is* occurring, and impressions of what *ought* to be occurring. Such strategies can be cognitive, such as rationalisation, which has been offered as an explanation for why recreation users frequently give positive assessments of recreation experiences in spite of less than optimal conditions; and, product shift, explained as a process by which recreationists retrospectively reframe a recreation experience so that it fits a newly defined experience (Manning & Valliere, 2001). As part of the variety of adaptive strategies in response to less than optimal recreation conditions, spatial or temporal displacement may occur.

Recreation displacement is necessarily linked with negative factors in the place of recreation (i.e., 'push factors') which encourage users to seek alternatives to their preferred place or time for their chosen activity. Recreation displacement can be broken down into several levels, the first and most extreme of which involves the removal of oneself from the usual place of recreation to a completely different location. This is referred to by Greenaway et al. (2007) as spatial displacement. The second form of displacement is temporal, whereby recreationists continue to participate in recreation in their usual places, but alter the times at which they visit in order to avoid the conditions most undesirable to them. Another form of this phenomenon is activity displacement, and concerns changes to the type of recreation activity occurring so as to be able to better cope with the negatively evaluated local conditions. Hence a recreationist might continue to visit a given site, but use a different recreation mode (e.g., mountain biking). Lastly, Greenaway et al. (2007) identify absolute displacement as the final form of displacement; this occurs when the usual users of the place cease to use a place altogether. All forms of displacement result in the recreationist adapting their recreation habits in some way, which, if occurring in significant numbers, will impact on recreation patterns regionally and nationwide. There is also the possibility that recreation displacement will have undesirable effects on the bio-physical environment as those people displaced from one site create impacts (e.g., on soil, vegetation, water and wildlife) in previously unvisited or less-developed settings.

Recreation displacement has been found to be a consequence of crowding in nature-based settings (Sæþórsdóttir, 2013; Sharpe, 1999); in addition, recreation conflict (i.e., conflict between

recreationists: in the same activity; recreationists undertaking different activities; and resource managers; or other resource users within the same area) is also identified as an antecedent to displacement (Budruk et al., 2008; Valentine, 1992). Adaptive strategies in all their forms are particularly relevant to the social impacts of crowding and recreation conflict, both of which can reasonably be anticipated to occur as a result of increases in tourism numbers. Crowding, conflict and displacement in recreation settings are therefore highly relevant. The literature on these, alongside that around responses of local users to recreation pressure, is outlined next, both from an international and from a domestic perspective.

3.2 International research

Research on displacement of wilderness users is scarce (Schneider, 2007). Much like the research on the attitudes of wilderness recreationists, displacement and conflict research in relation to nature-based recreation is largely U.S. and Europe-based (Perera, Senevirathna, & Vlosky, 2015). Iceland stands out as the setting for recent and relevant research occurring at the nexus of nature-based recreation and tourism. As a destination facing rapidly increasing tourist numbers, and one with a unique and distinct natural landscape, Sæþórsdóttir's (2010) research addresses the impacts of increasing visitor numbers on its environmentally sensitive and increasingly popular remote areas, and its use by domestic and international visitors for recreation. Iceland's highland areas are vulnerable to environmental degradation from the visitors themselves who seek remote wilderness experiences, from tourism infrastructure provided to cater for them, as well as from infrastructure for power generation. A big part of the attractiveness of nature-based settings for recreationists in the Sæþórsdóttir (2010) research, as well as for recreationists worldwide, is that activities are carried out in remote and peaceful wilderness areas, and that consequently, users may expect minimal or no interaction with other users. This means the highly subjective notion of visitor perceptions becomes significant. Many studies focus on visitor perceptions or attitudes to such topics as crowding, tourism, and, as the study previously outlined, perceptions of wilderness, which has itself been shown to be a relative and highly subjective term.

Perceptions of wilderness are dependent on peoples' levels of exposure to and associations with remote natural areas (Higham, Kearsley, & Kliskey, 2000; Sæþórsdóttir, 2004; Sæþórsdóttir, Hall, & Saarinen, 2011). Areas deemed 'wilderness' (or backcountry, or remote) can change according to one's familiarity with, socially constructed definitions of, and exposure to these types of areas. Consequently, people can have markedly different impressions and experiences of the same place and activity according to their differing expectations and previous experience(s) (Cessford, 1997; McKay, 2006).

A person's familiarity with a place, their place attachment, has been shown to have an effect on their responses to changes in that place (Budruk et al., 2008; Kyle, Graefe, Manning, & Bacon, 2004; Schroeder & Fulton, 2010). Research in this area has shown that impacts on an area are mostly felt by those closest to it (either by residence, proximity or familiarity based on frequency of use). An illustrative example of this is the 'last settler syndrome', a concept which describes the phenomenon whereby successive new residents (or users) of an area retain their first impressions of the place as the baseline of what is normal, acceptable or appropriate (Nielsen, Shelby, & Haas, 1977). The concept has been used in recreation, tourism and place attachment research to explain conflicts that arise over social carrying capacities, as well as place-use conflict (Groothuis, 2010). Its significance to recreation in nature-based settings is associated with displacement. Alongside displacement of long-time users can come the importation of 'new' users whose tolerance levels to adverse conditions (such as those which led to the displacement of the previous cohort) are higher. This has the potential to lead to the erosion of optimal conditions in a place, as successive groups see only the current conditions and use these as the base level for comparison (Greenaway et al., 2007). The last settler notion has also been referred to in the literature as the 'floating baseline effect' (Booth, Cessford, McCool, & Espiner, 2011).

Kyle et al. (2004) examined wilderness users' perceptions of social and environmental conditions on the Appalachian Trail in the U.S. and found that the higher the respondents' scores for place identity, the more likely they were to perceive conditions encountered as problematic. Supporting this, White, Virden, and Van Riper (2008) showed that familiarity with a place resulted in visitors having increased sensitivity to a number of factors, including the potential for recreation conflict. Social-psychological factors and rationalisation processes have been identified in the literature to account for this.

Crowding is another concept subject to individual perceptions; again, perceptions of crowding are influenced by both previous place experience and expectations. Although one study found that recreational boaters evaluated the presence of people positively (Kuentzel & Heberlein, 2003), crowding is most commonly associated with negative evaluations from nature-based recreationists and is strongly correlated with displacement (Arnberger & Brandenburg, 2007; Gramann, 2002; Kearsley & Coughlan, 1999), examples of which follow.

Research conducted in Austria found that national park-based crowding was more likely to be reported by local residents than those from outside the area (Arnberger & Brandenburg, 2007). To reach these findings, researchers identified three visitor groups - local, regional and those from wider Austria and beyond - and assessed via questionnaire how previous experience of a place affected their perceptions of crowding. The study concluded that displacement (both temporal and

spatial) occurred most frequently for local residents/users; i.e., those with the most experience of the place. The previously cited study from the U.S. state of Virginia had similar findings regarding increased impact of crowding on local residents (Jurowski & Gursoy, 2004). In contrast to these, however, Hall and Cole (2007) found that displacement was *not* a concern in a study of recreationists in Oregon and Washington. Although there were reported increases in visitor numbers, researchers attributed lack of reported displacement to the effective use of other coping mechanisms by recreationists. These coping, or adaptive strategies are reportedly effective when there are limited local options available for the activity of choice, or when practitioners of the activity are heavily involved with and derive great pleasure from their activity (as opposed to those characterised as casual recreationists). This is encapsulated in Bryan's (1977) concept of recreational specialisation which characterises recreationists as on a continuum from low involvement to specialist interest, each level displaying distinct differences across a range of criteria, including expectations, preferences and attitudes. The Schroeder and Fulton (2010) examination of anglers in the Minnesota area of the U.S. found that it was the avid anglers who "experienced more problems and reported more coping but [who ultimately] expressed greater satisfaction" (p. 291) with their experience of crowded river banks.

Managers attempting to address issues with crowding in outdoor recreation settings have often turned to the concept of carrying capacity - a framework initially used to identify a threshold beyond which particular components of a natural resource system could no longer sustain the demands on it (Manning, 2011). Since the 1970s, the concept has also been applied to recreation and tourism settings and sought to find the highest level of visitor use possible at any given site before the visitor experience is compromised. This 'social' or 'recreation carrying capacity' has enjoyed only limited success given the normative character of crowding; there is considerable individual and group variation in negative interpretation of visitor density. Sæþórsdóttir (2004) notes that carrying capacity, although useful conceptually, has not been consistently deployed to determine the actual levels of visitors a destination can absorb before its wilderness status is at risk. This view is shared by McCool and Lime (2001), who agree that many of the variables used to determine a location's carrying capacity are not in line with 'real world' uses, and so, consequently, any numeric assessment of carrying capacity cannot be viewed as valid. These examples point to the need for carrying capacities to be viewed in a more nuanced way.

So far as international research on residents' attitudes to tourism is concerned, little deals with recreation specifically, and little is recent. This is also true of the reverse; that is, recreation research with a focus on tourism is also lacking. However, there is literature that approaches related topics, such as tourism and its impact on leisure or recreation related facilities. For example, Brunt and

Courtney (1999) studied a small UK town on the South coast and found that although tourism was associated with crowding of (unspecified) public facilities, it was also attributed with enabling the provision of more leisure and other facilities. Similarly, studies in the U.S. states of Hawaii and Colorado reported findings that residents were pleased that there had been an increase in parks and recreation areas (Liu & Var, 1986) and recreation facilities (Perdue, Long, & Allen, 1990) because of tourism. Liu and Var's (1986) now dated study found that over half of survey respondents agreed with the statement that "because of tourism there are more parks and other recreational areas for swimming, hiking, golfing, etc. for local [Hawaiian] residents" (p. 209).

In addition, there is a slew of international studies reporting resident *displeasure* with tourism's impacts on recreation, leisure, or other public facilities. It is frustrating that the specific nature of recreation and other facilities is rarely defined in these studies, as this leads to difficulty in making comparisons between findings. The studies are noted merely to show the contradictory nature of what research there is, and the dearth of highly relevant and recent literature generally.

3.3 New Zealand research

New Zealanders view access to remote and wilderness areas as a treasured and iconic aspect of life in this country (Sport NZ, 2017; Wray, Espiner, & Perkins, 2010). An important part of this is New Zealand's public conservation estate, within which lie many unspoiled natural settings prized by domestic and international visitors alike. The management of conservation lands and waters includes a mandate to promote the use of the conservation estate for recreation, and use of the conservation estate by traditional recreationists remains high (Ipsos, 2016). Recent DOC-funded research reports that 80% of New Zealanders have visited a DOC park or place in the previous twelve months, a figure which grew from 71% in 2013 (Ipsos, 2016). Additionally, the conservation estate is recognised by the tourism sector as a significant resource, one that is increasingly under pressure from international tourism (Brunton, 2019; Department of Conservation, 2014).

Tourism's positive impacts (such as its economic benefits) are well cited, but, increasingly, negative impacts are being reported. Popular press in the United Kingdom reports that the wellbeing of New Zealanders is at stake from increases in tourist numbers (Roy, 2019), and local dissatisfaction with tourist crowding is high (Higgins, 2017; New Zealand Herald, 2018). In relation to public conservation lands and waters, research has shown that some local or traditional recreation users can perceive international visitors negatively, on a scale from benign resentment to thinly veiled hostility (Wray et al., 2010).

A key component of New Zealand's nature-based outdoor recreational offerings is a network of 'Great Walks'. The Great Walks are series of walks located within the conservation estate, managed

by DOC, jointly promoted by Tourism New Zealand, DOC, and New Zealand's national airline, Air New Zealand, as tourist destinations in themselves (Tourism New Zealand, 2019). In recent years the series of walks have received media attention with reports that New Zealand residents have been unable to secure bookings, despite attempting to do so well in advance of intended travel times (New Zealand Herald, 2018). In order to facilitate greater access for domestic users (in accordance with their remit under the Conservation Act 1987 to 'foster recreation'), and to increase income from the walks to improve related infrastructure, a price rise was trialled for international visitors in 2017 (Office of the Minister of Conservation, 2018). At the time of the price increase, international bookings for the Great Walks comprised 60% of all bookings, however, 2019 interim figures show 70% of bookings from New Zealand citizens (Office of the Minister of Conservation, 2019). The most famous of the Great Walks, the Milford Track, had the lowest proportion of domestic bookings (53%), while all other walks showed significantly more bookings from New Zealanders than from international visitors (60% - 91%) (Office of the Minister of Conservation, 2019). DOC's promotion of this via press release shows their commitment to demonstrate prioritisation of access for New Zealanders.

Another important part of New Zealand's outdoor recreation landscape, comprised largely of public conservation lands, are relatively remote settings known collectively as the 'backcountry'. Backcountry areas are those which are relatively difficult to access, typically located beyond road ends. The backcountry has long been the domain of hunters, trampers (hikers) and adventurers whose experiences are characterised by solitude and skilled self-sufficiency. A large part of the experience in the backcountry is its remoteness and the consequent solitude and escape from 'civilisation' found there. Research around backcountry use was prolific in the mid to late 1990s, with some focus on displacement (Kearsley & Coughlan, 1999; Visser, 1995), and crowding (Kearsley & Coughlan, 1999). Recent perspectives point to reductions in the importance of the backcountry to the collective New Zealand psyche; this is claimed to be due to changes in the makeup of the population resulting in factors other than 'the great outdoors' having greater impacts on identify formation than was previously the case (Habrow, 2019; Brent Lovelock, Lovelock, Jellum, & Thompson, 2012).

Several bibliographies and syntheses of New Zealand outdoor recreation literature have been compiled over time, the findings of which highlight two areas where further study is warranted (Booth & Mackay, 2007; Department of Conservation, 1996; Devlin, Corbett, & Peebles, 1995; B. Lovelock, Farminer, & Reis, 2011; Peebles, 1995; Sport NZ, 2017). There is support for both more longitudinal studies, and studies which can contribute to a broader picture of recreation. The present review of the literature finds the same abundance of site- and time- specific research.

Popular tourist areas with high recreation value or demand are well represented in the literature (for example, Aoraki/Mt. Cook (Thompson-Carr, 2012; Wilson, Purdie, Stewart, & Espiner, 2015), and South Westland's glaciers (Wilson, Espiner, Stewart, & Purdie, 2014)), while more general research remains focussed on sustainability and patterns of use, and is typically grouped around the following settings: mountainous areas (Booth & Cullen, 2001); protected areas (Strickland-Munro, Allison, & Moore, 2010; Wray, 2009; Wray et al., 2010); backcountry areas (Kearsley & Coughlan, 1999; Visser, 1995); forests (Pan & Ryan, 2007); and the conservation estate, including DOC walks (Booth et al., 2011; Cessford, 2000; Sharpe, 1999). Additionally, Lake Ellesmere/Te Waihora has been the recent focus of research related to its status as a significant wetland ecosystem and its restoration as a site for recreation activities (Brennan-Evans, Espiner, Rennie, & Nimmo, 2020; Espiner, Stewart, & Lizamore, 2017).

Although little has changed since reports in 2007 that "[l]ittle research in New Zealand has specifically addressed displacement issues" (Greenaway et al., 2007, p. 150), the issue has been addressed in the context of the Great Walks. The Milford Track, for example, is regularly fully booked over the summer season and has attracted criticism for being crowded (New Zealand Herald, 2018). However, recent research found that displacement was not an issue when expectations around visitor numbers is managed (Booth et al., 2011). Furthermore, the walk was found to be of such environmental and social significance to domestic users that it was sometimes viewed as a 'must do'; the 'once in a lifetime' framing of this walk was found to offset many (if any) adverse conditions visitors encountered (Booth et al., 2011).

As with international research, New Zealand resident or community opinions on tourism's impact on recreation is sparse and variable. Although the extensive survey undertaken by Greenaway et al. (2007) found little evidence of recreation displacement, the authors cautioned that recreationists' tendency to deploy rationalisation as a coping strategy may obfuscate results, suggesting that further investigation is needed to explore the displacement phenomenon. This is interesting, given that the remoteness of many nature-based settings, and New Zealand's relatively sparse population, means traditional recreationists expect minimal interaction with other users. Wray's (2009) thesis concluded that this was indeed the case, in the Fiordland region at least; although, given the changing nature of the make-up of New Zealand's population, the propensity for this to remain so can be questioned. Nevertheless, there currently exists within New Zealand a range of nature-based settings to suit a variety of personal definitions of 'wilderness', and as such a variety of recreation experiences are available.

A useful tool characterising the range of recreation user groups by type and appropriate recreation opportunity offered has been a cornerstone of DOC's visitor management since the mid-1990s (Department of Conservation, 1996). Although the classification system was devised to better enable planners to develop tracks and infrastructure to meet the needs and expectations of recreationists, its definition of visitors both clarifies the usual 'types' of recreation users, and demonstrates the breadth of uses that nature-based settings provide for recreationists, as well as the experiences possible for each group (see Table 1, below).

Table 1. Visitor/user group identification (source: Department of Conservation, 1996, p. 25)

Table 1 – Identifier visitor/user group		
User Group	**Visitor Group**	**Definition**
1	Short Stop Travellers (SST)	Visitors, including both local and international, travelling either the main tourism highways/access roads, or visiting places in their local area. They utilise the natural edge along these roads or in these local areas for visits of up to one hour return.
2	Day Visitors (DV)	Visitors, including both domestic and international, and local community visitors seeking an experience in a natural setting with a sense of space. This is normally associated with a road-end situation or scenic attraction with recreational opportunities for up to a full day's duration.
3	Overnighters (ON)	A group that includes both domestic and international visitors and local community visitors seeking an overnight experience in a predominantly natural setting. The setting is normally associated with road end or boat accessible sites. These visitors require high quality structures and services similar to those provided for Day Visitors (DV).
4	Backcountry Comfort Seekers (BCC)	Visitors seeking a low-risk, relatively comfortable experience in the backcountry. People generally inexperienced in a backcountry setting with a wide age range. They require easy access, want comfortable overnight accommodation.
5	Backcountry Adventurers (BCA)	Visitors, usually New Zealanders, with a reasonable level of backcountry skills and experience. They require only a basic track and access is largely on foot except where air or boat access is permitted.
6	Remoteness Seekers (RS)	Visitors, usually New Zealanders, with a high level of backcountry experience seeking a wilderness experience with limited interaction with other parties. Access is largely on foot except where air or boat access is permitted, and activities are carried out with a high degree of self-reliance.
7	Thrill Seekers (TS)	Sites with a mostly natural backdrop, often with a dramatic element to them. The setting is often spectacular. The sites are found right across the recreation opportunity spectrum. They are highly accessible using a range of transport (including aircraft). The visit is up to a day's duration and involves exciting activities such as downhill skiing, parapenting, rafting, bungy Jumping and snowboarding. There is also an element of thrill seeking in some

	overnight backcountry activities such as, cross-country skiing and long distance rafting, and such visitors should be considered as Backcountry Adventurers or Remoteness Seekers. High numbers of international Visitors are represented in this group (except for downhill skiers who tend to be New Zealanders), comprising largely the young and well off. Currently high visitor numbers relative to other groups.

The classification of visitor 'types' and the associated recreation opportunities and experiences possible is underpinned by the idea that recreationists demand different things from the settings they visit. From the categories described above it can be seen that 'backcountry adventurers' (BCAs), for example, have different expectations of wilderness than do 'short stop travellers' (SSTs), who have been shown to typically spend only around one hour in natural areas (Department of Conservation, 1996; Pan & Ryan, 2007). In addition, the needs of locals, whose classification as 'day visitors' (DV) would apply when accessing nature-based recreation sites close to their own homes or holiday homes, might again be different. This highlights the importance of expectation management when considering recreationists' satisfaction levels.

There is scope to further put these categories to use by monitoring their application over time relevant to certain areas; subsequent changes in categorisation (and corresponding changes in infrastructure resourcing requirements) would denote changes in visitor type - perhaps as a consequence of recreation displacement, or other factors.

Although it is preferable to avoid undue emphasis on displacement, the concept is associated with a range of related topics in recreation and tourism. Even in the event that traditional recreationists have not or do not intend to displace, their response to what is a significantly changed tourism landscape since much of the previous work in New Zealand was done, is important to capture. In order for appropriate management and planning to occur, it is important to understand patterns of recreation use from the micro to the macro level. Consequently, broader exploration of nature-based recreation behaviours would be beneficial.

In addition, social carrying capacities in recreation have been identified as being under-researched; more exploration of this phenomenon would contribute to detailed understandings of how recreation users respond to changing conditions in nature-based settings.

Lastly, there are gaps in existing literature around the types and extent of the domestic population who engage in recreation in nature-based settings. The varied, secluded, and non-commercial nature of recreation practices (such as hunting, tramping or fishing) does mean there are difficulties in reaching the target samples for certain group. The following section outlines a selection of relevant methodologies.

4. Selected methods of relevance

A variety of methods have been employed to examine issues related to recreation-based visitation to natural settings in New Zealand and internationally. Questionnaires, surveys and interviews are the most popular methods used. Although few researchers emphasise or evaluate the efficacy of their chosen methodology outside of methodology journals, methods sections of published research usefully present information in a summarised format allowing for relatively easy comparison.

Several seminal research projects in the nature-based recreation space have successfully used questionnaires and/or surveys, a representative selection of which is outlined next.

On-site approaches are frequently used in relation to assessing the social impacts of recreation in nature-based settings. Arnberger and Haider (2007) interviewed and surveyed 237 people on-site at an Austrian walking trail. Their survey included image-based questioning, displaying various combinations of visitor numbers, activities, and concentrations to assess participant reactions and their potential for displacement. The authors assert that their method enabled them to better assess the relationship between displacement and the proximity of other users (Arnberger & Haider, 2007), a point also made by Manning (2007) whose insights on research method advocates the use of visual prompts to assess this phenomenon. Grieser et al.'s (2005) U.S. study on perceptions of crowding deployed similar methods, as did Miller and McCool (2003), who examined stress factors and responses in a recreation setting where they approached participants at specific locations either at a trail end or visitor centre. People were asked to complete a two-part questionnaire (one on-site, and one a mail-return questionnaire), this resulted in the completion of 1,554 on-site and 1,161 mail-returned questionnaires (an overall response rate of 75%).

As a result of the requirement for many campers in North American campsites to register (and pay) for the experience, camping permits and other associated administration documents have proven useful for many researchers in these areas. Canadian researchers consulted the registration documents of recent backcountry campers to establish demographic information, and to source participants for a mail-out survey to examine effects of social use on backcountry areas (MacKay & Campbell, 2004). The authors noted this method was useful for establishing recreational patterns of use in backcountry areas. In addition to the mail-out survey, researchers distributed self-administered questionnaires at various National Park entry/exit points (their area of interest). This method was effective in capturing current and recent users of that area; however, New Zealand's lack of this type of registrations system for national park users would make this method ineffective here.

It has been suggested (e.g., by White et al. (2008)) that the negative phrasing of some survey/questionnaire questions can lead to skewed results because of social desirability bias; in fact they attributed divergent findings in the literature to this phenomenon. This lends support to the idea of engaging at a deeper level with participants about their experience of recreation in nature-based settings, which could include in-depth interviews. Perhaps to this end, Icelandic research on perceptions of wilderness and the impingement on wilderness of infrastructure used interviews alongside questionnaires (Sæþórsdóttir, 2004). The researcher carried out 12 in-depth interviews which complemented the 546 questionnaire responses gathered on-site at a popular remote region in Iceland. (The researcher concluded that although crowding was an issue respondents acknowledged the benefits of [unimposing] infrastructure in supporting people to be able to recreate there.)

Although site-specific research is useful for capturing people's experience of a place, and/or changes in this over time, it cannot capture those for whom negative experiences of that place has resulted in them no longer recreating there. Although, as Anderson and Brown (1984) noted, it can be effective for predicting who *may* be displaced in future. Greenaway et al. (2007) were able to avoid difficulties associated with capturing already displaced people by distributing a questionnaire to a wide range of nature-based recreationists through DOC offices and centres. This 'communities of interest' approach prioritises activities over the sites where the activities actually occur. The questionnaire was advertised through press releases, via various outdoor recreation clubs, in relevant magazines and though the Department of Conservation's website. From the 2,271 responses received, the researchers concluded that while recreation displacement in New Zealand was not a significant issue, personal rationalisation processes potentially impact on reported satisfaction levels. Such an extensive study in this field has not occurred in the twelve years since its results were reported.

The communities of interest approach has additional benefits in that it can avoid the pitfalls associated with low response rates from random sampling of the general population (such as through the use of the electoral roll, for example). In addition, Hall and Cole (2007) pointed out that because of low levels of familiarity the general population has with wilderness areas, representative or purposive sampling is more appropriate in many cases. More relevantly, the approach would enable greater access to recreationists who are more likely to have valuable insights about a place. Participant recruitment through communities of interest allows the use of snowball sampling, effective amongst communities of interest because of a shared interest and passion for their activity.

Questionnaires/surveys are frequently paired with face to face interviews; in the majority of cases interviews take place with recreation users on site and are designed to add depth to what surveys

can capture (e.g., see Grieser et al. (2005) and, McKay (2006)). Interviews with key informants or stakeholders and qualitative approaches grounded in ethnography such as observations and field journals/diaries have also been used, usually to explore more nuanced topics that require examination of deeply-rooted socio-cultural phenomena (Wray et al., 2010). For research interested in more than patterns of use or assessments of preferences, attitudes or perceptions, in-depth interviews afford participants agency in the direction and topic of discussion, as well as freedom for the interviewer to 'drill down' into topics of significance. The inclusion of at least a component of in-depth interviewing would allow a nuanced view of recreationists' responses to tourism increases.

5. The study area: The Selwyn District

As the number of international visitors to New Zealand continues to increase, so too do the number of visitors to New Zealands' regions. The Selwyn District's close proximity to Christchurch and its international airport, result in it being a popular thoroughfare for visitors, and a gateway to other parts of the South Island. Within the district there are a number of scenic attractions and places ideal for nature-based recreation activities. Amenities and attractions within the Selwyn District are being used and visited by increasing numbers of people; this is to the extent that three sites within Selwyn have been earmarked to receive funding (Coes Ford, Lakeside Domain and the town of Springston) from the Tourism Infrastructure Fund, a fund designed to alleviate tourism-related pressures in the regions (Ministry of Business Innovation and Employment, 2019d).

The Selwyn District therefore constitutes an ideal test site for examining how traditional recreationists in nature-based settings respond to increasing numbers of overseas visitors. It is anticipated that further, nationwide, studies take place to assess the important issue of recreation in nature-based settings against the backdrop of the new high-volume tourism landscape. This section describes the Selwyn District, its character as a tourism and recreation destination, and its most popular attractions for recreation.

5.1 The Selwyn District

The Selwyn District is a 6,420 km^2 area in the middle of New Zealand's South Island (Selwyn District Council, 2019). Its varied terrain ranges from mountainous inland areas, sub-alpine hills as well as a swathe of flat, Canterbury Plains farmland. It is bordered to the south west by the Rakaia River and to the north east by the lower reaches of the Waimakariri River, and extends inland and to the north into the Southern Alps. There is ready recreational access to water via lakes (such as Coleridge, Pearson and Ellesmere/Te Waihora), the large braided Waimakariri and Rakaia Rivers, and a short coastal section provides access to the South Pacific Ocean. According to its district council, the region can be characterised as a "high quality natural environment populated with a number of townships, among what is essentially a working rural backdrop" (Selwyn District Council, 2019, p. 22).

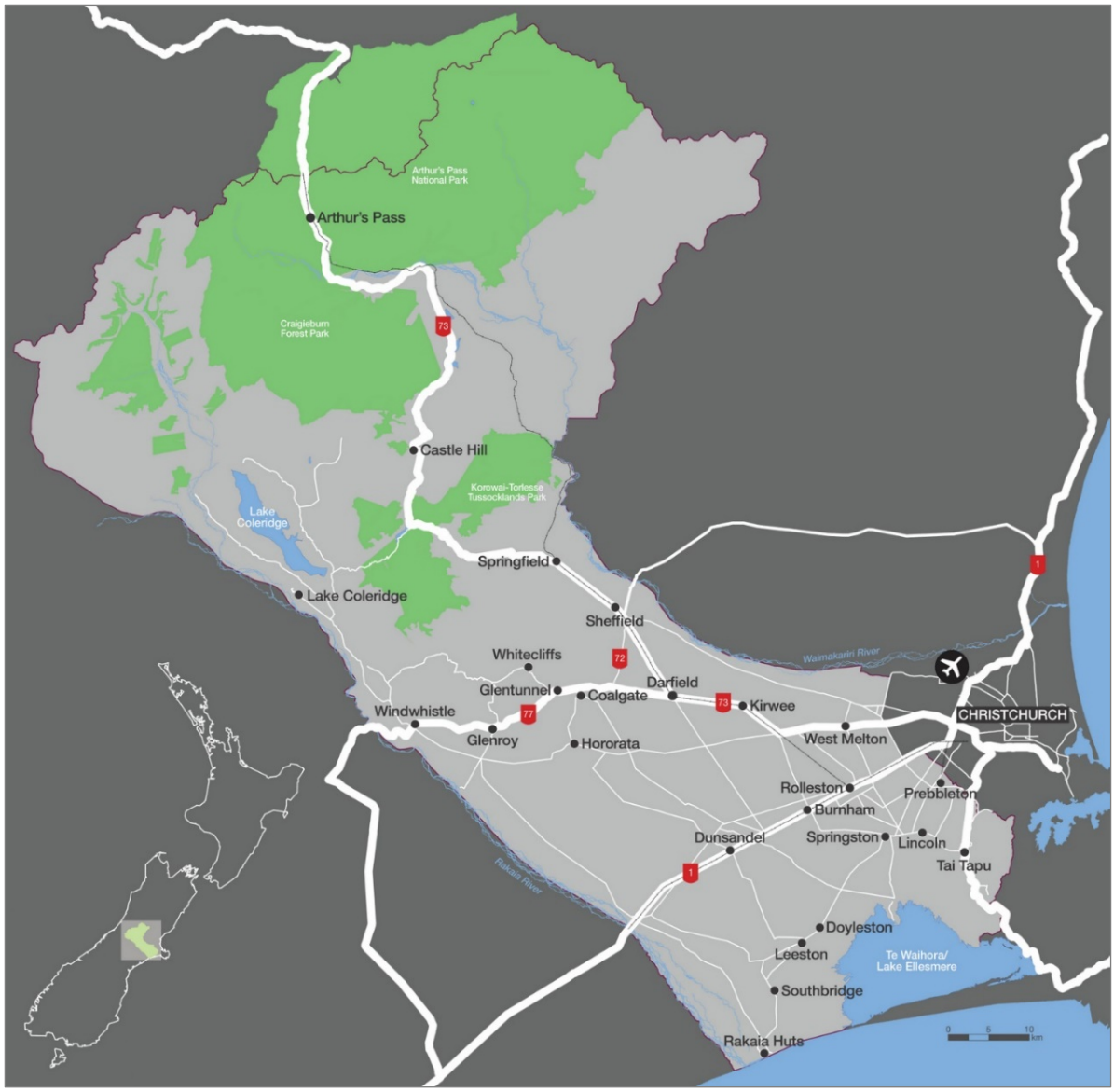


Figure 2. The Selwyn District: Boundary, towns and roads (source: Selwyn District Council, 2019b)

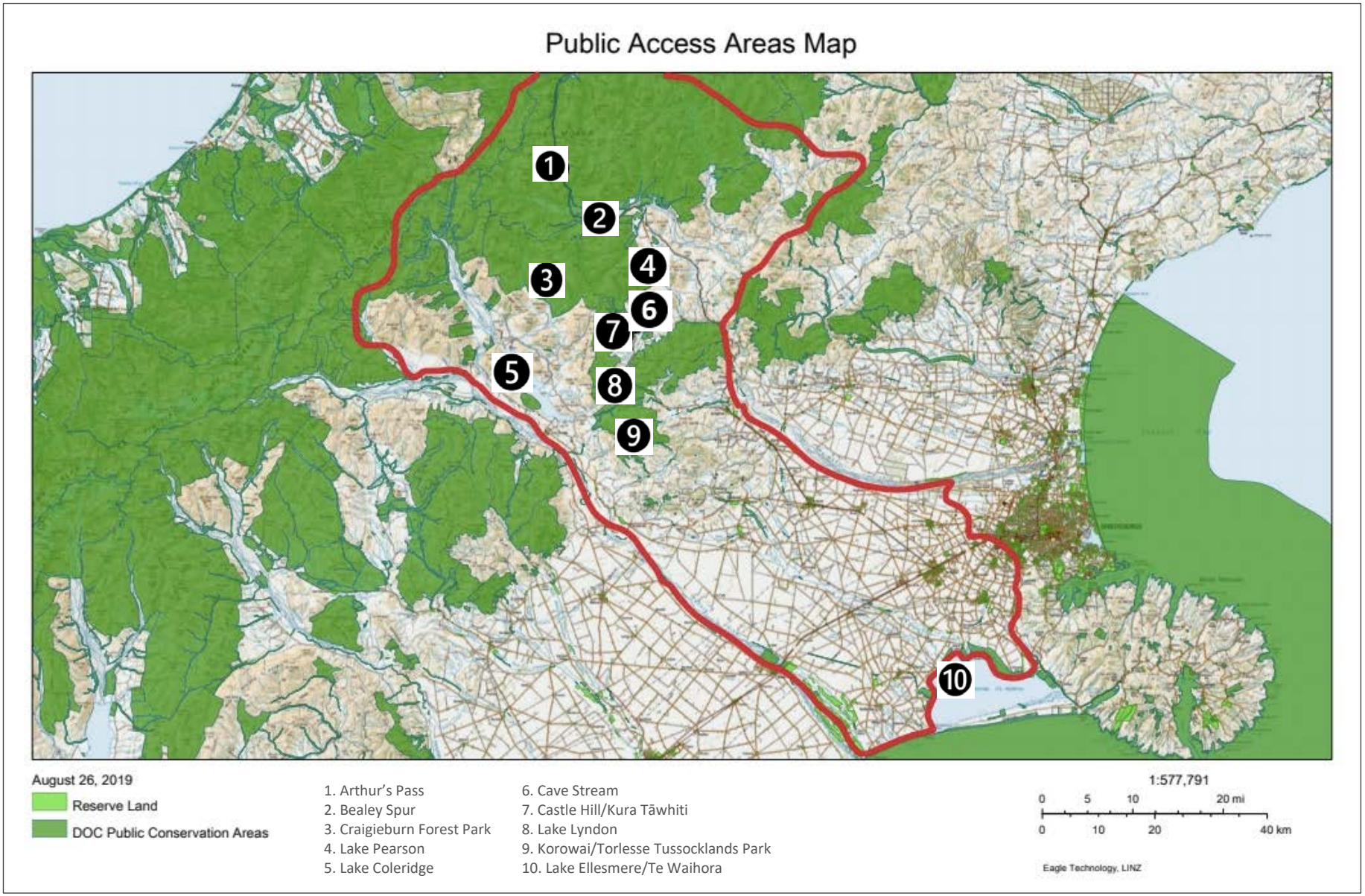


Figure 3. Selwyn public access areas and popular recreation places (source: New Zealand Walking Access Commission, 2019)

Residents of the Selwyn District number around 62,000, almost a third of whom live in rural settlements (Selwyn District Council, 2019). Four main towns comprise almost half the population of the Selwyn District: Rolleston, Lincoln, Prebbleton and Darfield. It is noteworthy that the three most populated of these towns are close enough to the city of Christchurch to serve as commuter hubs. The area has a growth rate more than double that of New Zealand as a whole, and its population is expected to continue growing, with the 2047 population predicted to reach 104,780 (Selwyn District Council, 2015a). The Selwyn District's resident population, although scattered, is mostly concentrated to the southern and eastern sides of the district, as Figure 2 shows.

5.2 Tourism and recreation in the Selwyn District

The district is administered by the Selwyn District Council (SDC), under whose direction a recent regional marketing campaign, 'Sensational Selwyn', has undertaken to promote the area as a tourist destination (Selwyn District Council, 2019). The increases in international tourism experienced nationwide also apply to the Selwyn District. This is confirmed by figures released in August 2019 showing a 13.2% increase from the previous year, the largest increase in tourist spending in the country (Infometrics, 2019). Such growth occurs in spite of the region not including many of the iconic features typically associated with New Zealand tourism (such as geothermal pools, fiords, or a major urban attraction). However, because the district has many areas of natural beauty within its boundaries, including approximately a third of its land area in the form of protected areas overseen by DOC (Selwyn District Council, 2015b), the area is popular with domestic and international tourists and recreationists alike. Indeed, a small section of Te Araroa Trail, a series of linked walking tracks running the length of New Zealand, passes through the Selwyn District. The trail is popular with international visitors and trail figures show that approximately four-fifths of those who walked the entire trail in 2019 were non-New Zealand citizens (Te Araroa Trail, 2020). Furthermore, Castle Hill/Kura Tawhiti is a small but internationally renowned bouldering destination (UK Climbing, 2020), drawing recreationists attracted to its distinctive rock formations. In addition to the protected areas popular with recreationists, the SDC administers 706 hectares of recreation reserves and 24 conservation reserves totalling 425 hectares (Selwyn District Council, 2019). These areas are designated open spaces intended for use by residents and visitors for people to "exercise, relax and enjoy the natural surroundings" (Selwyn District Council, 2019, p. 22), and are typically open spaces around rivers or streams, or parks in rural areas. (See Figure 3 for map showing public access and recreation areas.)

Because of its close proximity to Christchurch (and its international airport), and the limited number of alpine passes traversing the Southern Alps, the district acts as a thoroughfare for visitors travelling north-south and east-west. Free independent travel (FIT), including self-driving, is an increasingly

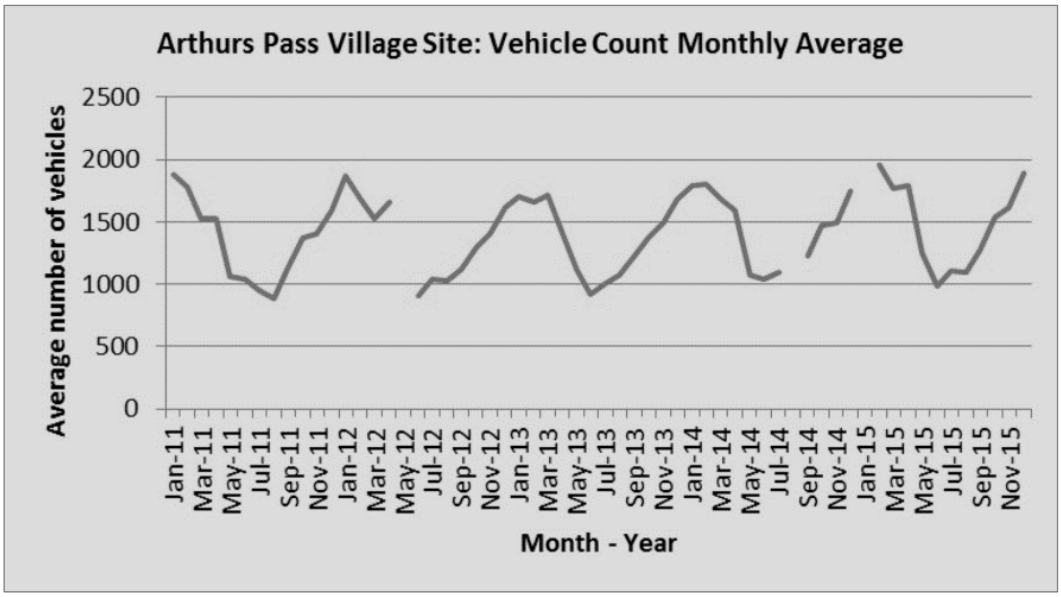


Figure 4 Arthur's Pass average daily vehicle numbers 2011-2015 (source: NZTA, 2016, p. 28)

popular way to travel. Camper van and car rental data show that for international visitors arriving in the South Island, the most popular route is the 'Christchurch, Queenstown and West Coast' route, which is stipulated to include Arthur's Pass (New Zealand Transport Agency, 2016). This route necessarily involves travelling State Highway 73, 132kms of which is within the Selwyn District (from Arthur's Pass to just east of West Melton), leading travellers through some of the South Island's most iconic nature-based tourism settings, including scenic reserves, conservation parks and national parks. Indeed, monthly averages from the New Zealand Transport Agency (2016) (NZTA) show vehicle numbers of almost 2000 per day passing through the Arthur's Pass Village during the peak season (summer) (see Figure 4).

Average daily traffic volumes through Arthur's Pass Village (including the approximately 13% that are heavy vehicles, that is, vehicles over 3.5 tonnes) rose from just over 1,200 in 2000 (Transit New Zealand, 2000) to consistently over 1,400 in the years 2005-2009 (New Zealand Transport Agency, 2009). Although a dip in vehicle numbers was recorded in the years after the 2010-2011 Canterbury

earthquakes, the trend line shows recovery and the 2018 average daily vehicle numbers through the town are at their highest (see Figure 5, below).

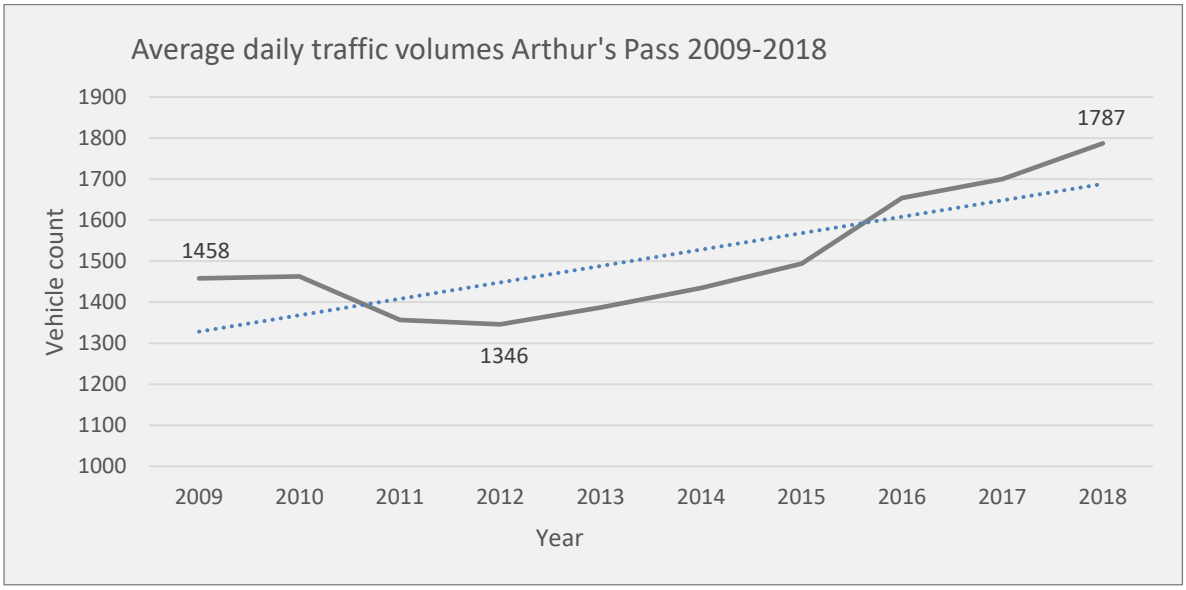


Figure 5. Average daily vehicle numbers Arthur's Pass, 2009-2018 (source: NZTA, 2014, 2019)

In line with general increases of visitor numbers to New Zealand, and to the Selwyn District, the number of people visiting the DOC-operated Visitor Centre in Arthur's Pass Village has increased steadily since 2013/2014 (Department of Conservation, 2019a). In addition, data from MBIE and economic forecasting consultancy Infometrics (2019), shows tourism spending[1] in the Selwyn District has consistently increased since 2010, almost doubling in the last 8 years (see Figure 6, below).

National and regional visitor data shows Australians are the best represented in visitor numbers to New Zealand and Canterbury (Ministry of Business Innovation and Employment, 2019b), and national figures show visitors from China and the United States are also well-represented. Arrivals data for Christchurch International Airport shows Australians followed by those from the United Kingdom and China as the most numerous international visitors.

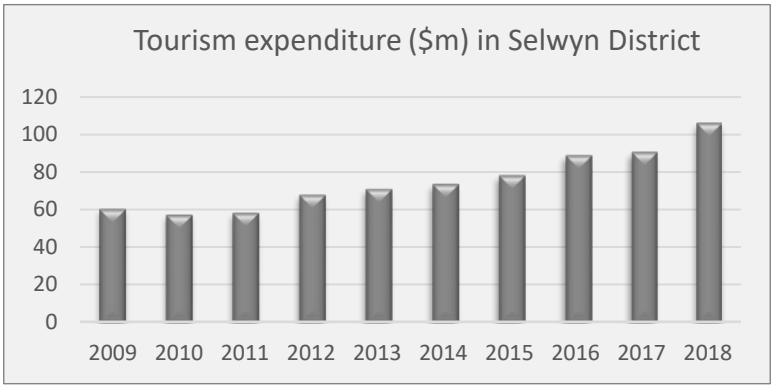


Figure 6. Tourism expenditure in Selwyn (source: Infometrics, 2019)

Accommodation options accessed by tourists in Selwyn range from motel,

[1] Tourist expenditure is calculated using electronic card transactions and calibrated to account for national differences in propensities to use cards versus cash (Infometrics, 2019).

hotel and boutique accommodation to cheaper options such as campervans or camping. Tourism spending previously noted reflects the costs associated with accommodation. Camping, and particularly freedom camping, sites are frequently located in nature-based settings. Because of this, and because camping itself is classed as a recreational activity, this will be discussed next.

Freedom camping is defined in the Freedom Camping Act (2011) as camping in a temporary structure or motor home/vehicle within 200 meters of: a formed road or motor vehicle accessible area, the mean low water springs line of any sea or harbour, or a Great Walks track. Freedom camping areas are typically not equipped with facilities usually associated with camping, such as toilets, cooking and cleaning facilities. The practice of freedom camping has become a contentious issue, with news reports of tourists leaving litter, engaging in unruly behaviour, and spoiling natural areas by urinating and defecating in unsuitable places (Selwyn District Council, 2017). However, camping remains a popular recreational activity as well as part of the range of accommodation options available to travellers. As such, this type of visitor can be classified as an 'overnighter' (ON), using the DOC visitor group identification criteria outline in Table 1. Freedom camping has increased New Zealand-wide, and increases in freedom camping in the Selwyn District are said to have been compounded after Christchurch freedom camping laws were tightened in 2016 (Angus and Associates, 2017; ChristchurchNZ, 2019). Figure 7 (below) shows the number of visitors who reported they did some freedom camping on a visit to New Zealand over 2008-2018.

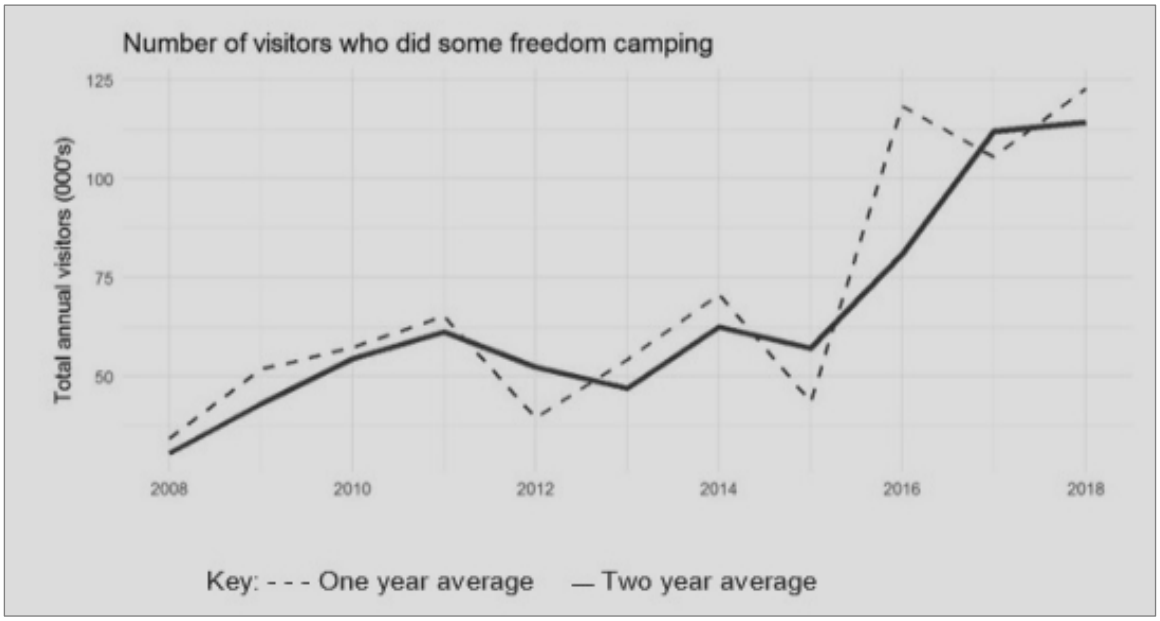


Figure 7. Visitors use of freedom camping (source: MBIE, 2019c)

In late 2016 the SDC surveyed areas frequently used for freedom camping (Chamberlains Ford, Coes Ford, Lakeside Domain and Whitecliffs Domain) to examine who was using these places. They found the majority of visitors were international, 84%, while 16% were New Zealand citizens (Selwyn District Council, 2017). Of the international visitors, German tourists were the most prevalent nationality (47%), and of the New Zealand visitors, three quarters were from Canterbury and just over half were from Christchurch. So, although Australian visitors make up the largest number of international tourists to NZ, as a percentage of all international visitors, German tourists have been identified as the group who are most likely to use freedom camping as an accommodation option (Angus and Associates, 2017; Ministry of Business Innovation and Employment, 2019a).

There are several non-commercial campsites in Selwyn, most are managed by DOC and attract a small fee (e.g., Andrew's, Greyney's and Hawdon Shelters, Klondyke Corner, Mistletoe Flats, Avalanche Creek, and Lake Pearson, see Appendix 3). In addition, several are managed by the SDC and, because they are free of charge, attract freedom campers (Whitecliffs Domain, Timberyard Point Lakeside Domain, Chamberlains Ford and Coes Ford; in addition, Rakaia Huts campground charges a small fee, and Glentunnel Holiday Park, although council-owned, is leased to a private operator who charges visitors for their stay). It is noteworthy that camping sites at Coes Ford, Chamberlains Ford and Lakeside Domain, proximate to the settlement of Springston, have been awarded funding from the most recent Tourism Infrastructure Funding round; this fund is dedicated by the New Zealand government for tourism-related infrastructure in regions currently facing pressure from tourism growth (Ministry of Business Innovation and Employment, 2019d). Notwithstanding the previously cited Selwyn freedom camping research which concentrated on only four reserves, it is currently unclear how many *domestic* visitors use freedom camping sites. Camping is currently welcomed in the previously noted SDC-managed reserves, and the most recently available reserve management plans state the intention to encourage free/freedom camping as an activity which enables people and families to access relatively natural outdoor areas and recreation opportunities (Selwyn District Council, 2009). Although there is evidence to suggest conflict occurs between users at Selwyn freedom campsites (Selwyn District Council, 2017), it is unclear if and how increases in overseas visitation has influenced traditional recreationist's use of nature-based camping places. However, according to the aforementioned freedom camping research, domestic visitors had higher expectations of solitude and access to free camping places than did international visitors (Selwyn District Council, 2017). These expectations may affect their intentions to return to areas populated with increasing numbers of campers.

In addition to camping, there are several areas within the Selwyn District that are popular with tourists and recreationists because of distinctive natural features, or their protected status resulting

in the preservation of their natural states. The following table summarises these, noting which activities are undertaken at each location, and the typical user groups associated with that place (as categorised by DOC, and noted in Table 1).

Table 2. Selwyn District recreation sites and activities (source: Department of Conservation, 2019b)

Location and size	Common recreational activities	DOC Visitor types (see page 11-12) and visitor data where available
Arthur's Pass National Park 118,472 ha	Sight-seeing, walking, hunting, a base for overnight tramps, ski touring and mountaineering (including skiing and snow-boarding at Temple Basin ski field).	All visitor types: SST, DV, ON, BBC, BCA, RS, TS 20% increase in traffic volume through AP, 2014-1018 (NZTA, 2019)
Craigieburn Forest Park 44,694 ha	Walking, tramping, skiing, snow-boarding, mountain biking (mtb), sight-seeing, hunting	DV, BCA 10% increase in visitors to shared mtb/walking tracks, 2018-2019* (DOC, 2019b)
Korowai/Torlesse Tussocklands Park 20,738 ha	Mountain-biking, walking, tramping, sight-seeing, rock climbing, hunting.	DV, BCA, RS
Kura Tāwhiti/Castle Hill 103 ha	Sight-seeing, walking, passive enjoyment, bouldering, rock climbing.	SST, DV 62% increase in visitors, 2009/10-2019/20 (DOC, 2019b)
Lake Coleridge area 3688 ha	Walking, fishing, water sports, camping, mountain biking, boating, sight-seeing, hunting 4WDing, horse trekking.	ON, DV
Lake Ellesmere/Te Waihora 19,781 ha	Game bird hunting, fishing, sight-seeing, art and craft, water sports, ornithology/ bird watching.	SST, DV
Cave Stream Reserve 16 ha	Caving, picnicking, sight-seeing, walking.	SST, DV 3% increase in visitors 2018-2019 (DOC, 2019b)
Lake Pearson 202 ha	Camping, fishing, picnicking, sight-seeing, walking, boating.	SST, ON
Lake Lyndon 88 ha	Camping, ice-skating, fishing, picnicking, boating, sight-seeing, walking.	SST, ON
Bealey Spur track 13km in length	Walking, tramping, sight-seeing.	DV, BA 50% increase in visitors 2017/18-2018/19 (DOC, 2019b)

*Dracophyllum, Hogsback and Lyndon Saddle tracks, averaged

Because of the wide variety of terrain types, the large areas of unspoiled environment, and its accessibility via State Highways 1 and 73, the Selwyn District has many attractions popular with recreationists. These draw local, domestic and international visitors and recreationists. Although there is little data available on the types of recreation activities international visitors undertake in the Selwyn District, national data (gathered via the annual International Visitors Survey) shows the four most popular recreation activities for international visitors are walking/hiking, visiting a natural attraction, visiting a beach, and visiting a national park- all of which involve nature-based settings represented in the Selwyn District. Referring again to the DOC visitor type classification in Table 1, these visitors range from the 'short stop traveller' (SST), to 'day visitors' (DV), as well as 'overnighters' (ON) and 'backcountry comfort seekers' (BCC). The chart below (Figure 8) shows these and other recreation activities undertaken by international visitors in New Zealand.

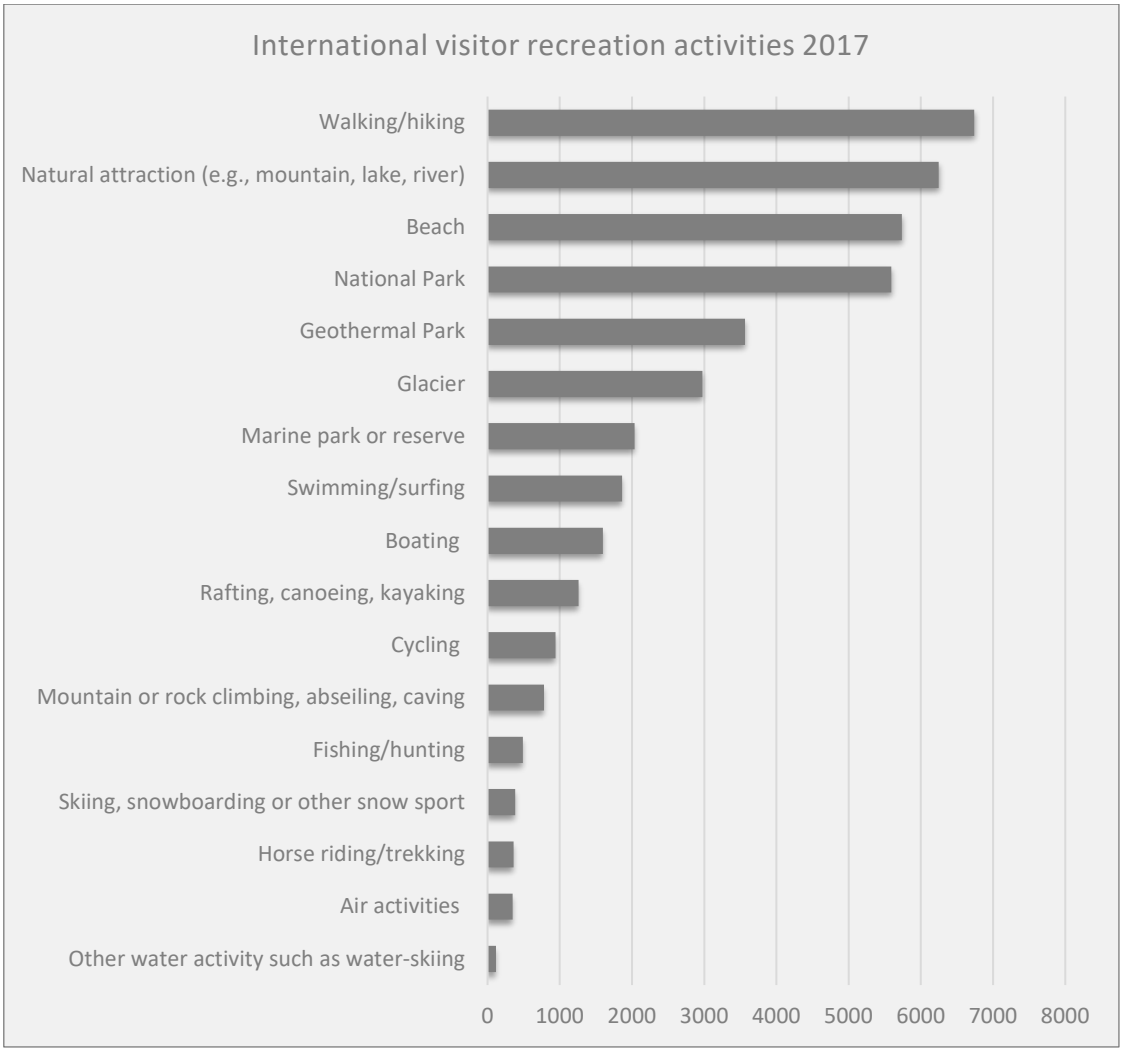


Figure 8. Visitors to NZ, recreation activities (source: Ministry of Business Innovation and Employment, 2019b)

5.3 Communities of interest

As described earlier, much of the research addressing the social impacts of tourism has focussed exclusively on residential communities. Owing to the sparsely populated nature of Selwyn's nature-based recreation places, and the consequent lack of proximate resident communities, these approaches are less relevant. Furthermore, difficulties in capturing the experience of those who have already been displaced from an area have been noted (Hall & Cole, 2007). Because of this, some research focusses on communities of recreationists, such as mountain bikers, skiers, or boaters, in order to capture the input of those who no longer recreate at sites of interest. This type of research concentrates on the people as opposed to the sites of interest with which most of the research previously outlined in this report has been concerned.

The Selwyn District has many clubs, groups and communities of interest based around recreation activities operating within its boundaries (as outlined above, see Table 2, also see Appendix 3). There are a variety of activities that take place throughout the Selwyn District, and specific activities cluster around certain natural features. For example, the map below (Figure 9) shows hunting and fishing access areas within Selwyn (New Zealand Walking Access Commission, 2019). Hunting areas (marked in grey) are located inland, in alpine and sub-alpine hill areas, while fishing and access points for fishing (marked with blue/white icons) are clearly concentrated along the lines of Selwyn's three main rivers, the Rakaia, Selwyn, and Waimakariri Rivers. (Note that the marked hunting areas are also provisioned with huts, see Appendix 5 for a map detailing the locations of huts and campsites.)

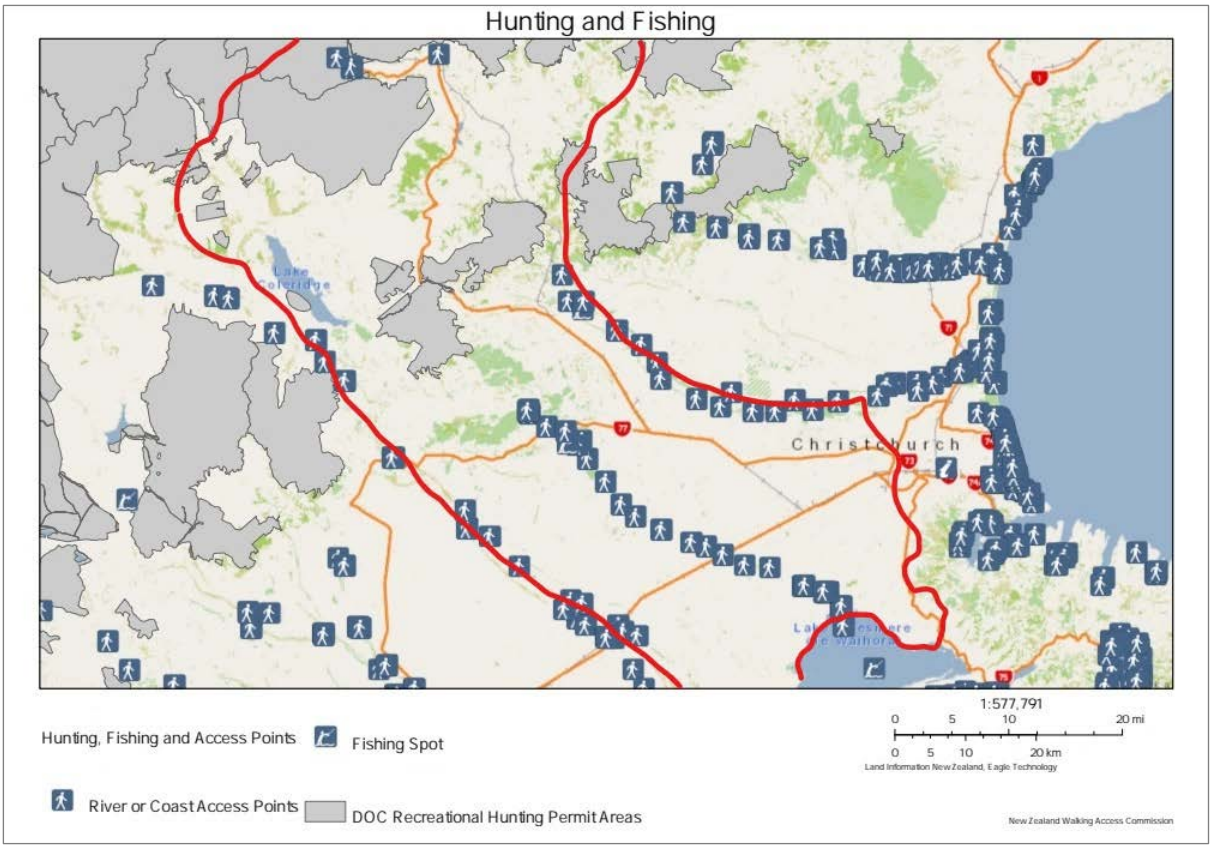


Figure 9. Selwyn and surrounds hunting and fishing access (source: New Zealand Walking Access Commission, 2019)

In addition, the rock formations and Castle Hill/Kura Tāwhiti are suitable for rock climbing, sight-seeing, bouldering and walking. It is feasible that a select number of such sites be targeted as part of a wider participant recruitment strategy. On-site approaches used alongside a range of other sampling strategies would enable a broad range of nature-based recreation users to be reached.

To identify communities of interest, key activities were searched online for evidence of both Canterbury-based groups participating in nature-based recreation, and groups making use of areas within the Selwyn District. Club websites, Facebook pages, and Meetup.com pages frequently showed evidence of group outings, trips and activities undertaken in the Selwyn District.

Recreation communities of interest constitute a valuable resource when it comes to accessing potential participants for research, particularly in the context of those who may have changed the way they carry out their recreation activities over time. Given the extent of the area within the Selwyn District, and the array of activities undertaken within the area, the task of gaining adequate access to nature-based recreation users is immense if site-based approaches alone were used.

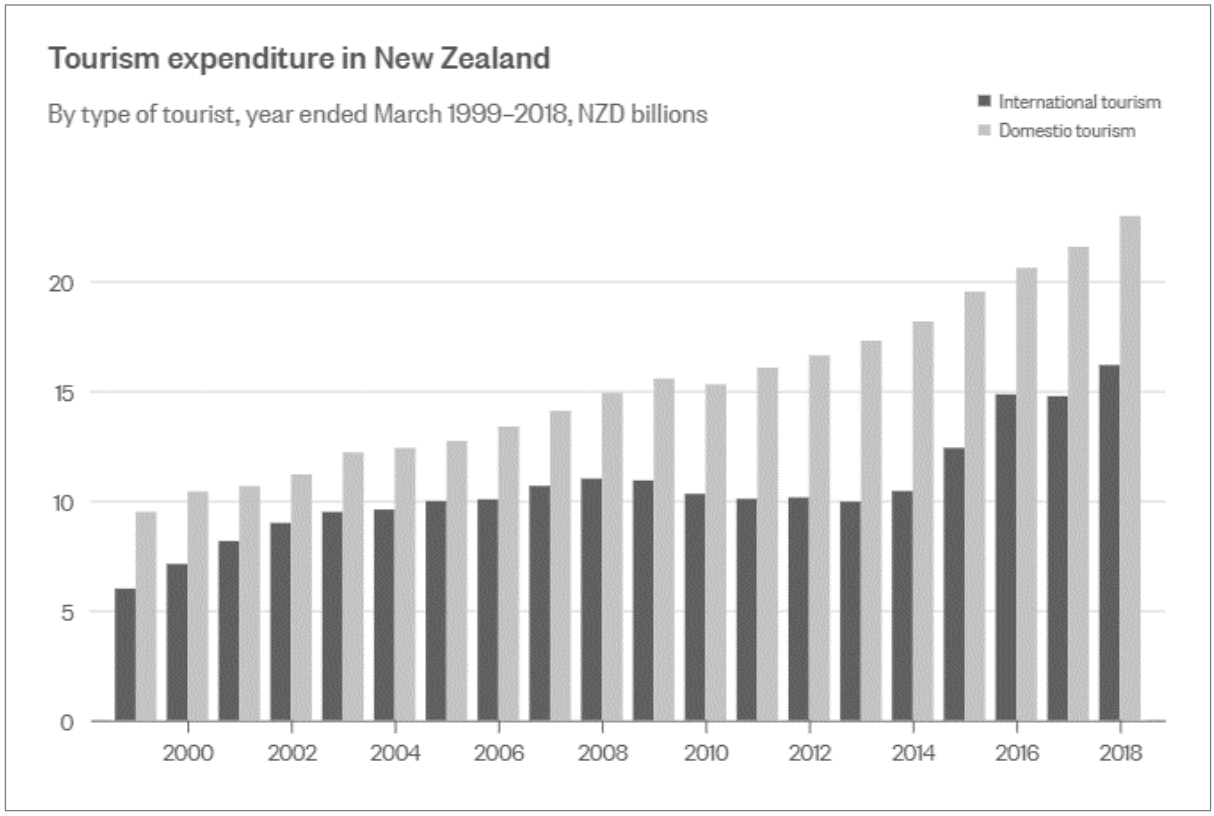
6. Conclusion

The Selwyn District contains a diverse range of well-used and well-loved nature-based recreation settings for locals. International visitor numbers to the district continue to rise and greater volumes of traffic on State Highways have been recorded resulting in increased use of recreation places adjacent to them. This is particularly the case with State Highway 73 which brings visitors close to several popular sites of natural beauty and recreation amenity. Questions remain about how traditional nature-based recreationists are responding to increasing tourist numbers. Research approaching this topic thus far has tended to concentrate around specific sites or groups of interest, and no comprehensive account has been made of how tourism affects traditional recreationists across a large area. In addition, examinations of recreation displacement have not yielded conclusive results, and difficulties have been found both addressing the issue of already displaced outdoor recreationists, and the role of rationalisation processes.

Research addressing the responses of nature-based recreationists to developments in tourism would constitute a valuable contribution to the recreation literature, particularly if conducted across multiple recreation activities and sites. However, there are practical methodological concerns around the size of the Selwyn District, the remote and secluded nature of some its nature-based settings, and the difficulty this creates in reaching those who recreate there. The human resources and time required to carry out site-specific fieldwork on this scale are immense. Even so, certain popular recreation places in Selwyn provide fertile ground for capturing the views of local, domestic and international users. The difficulties in securing a sample with appropriate levels of knowledge of nature-based settings for recreation have been noted. To circumvent these collective issues, a multi-pronged approach to sourcing participants would be suitable. Hence, methods could involve targeting popular recreation sites for participants, and, in particular, approaching participants through identified outdoor recreation communities of interest. The use of social media platforms such as Facebook could also be considered as a participant recruitment tool - an approach that has proven fruitful in health research (Whitaker, Stevelink, & Fear, 2017), through its ability to facilitate rapid ‘snowball’ sampling. It is important to note, however, that, although large and increasing proportions of the recreating public in New Zealand have ready access to the internet via portable hand-held devices, limitations remain around social media usage biases. Notwithstanding the inherent weaknesses in any such purposive sampling approaches, consideration ought to be given to the adoption of tools likely to enable the present research topic to be appropriately addressed, and, allow broad(er) coverage of the expansive physical area within which data needs to be gathered.

Appendices

Appendix 1: Domestic and international tourism expenditure in New Zealand



Appendix 1 Tourism expenditure in New Zealand by type (domestic, international) (source: Figure.nz, 2019)

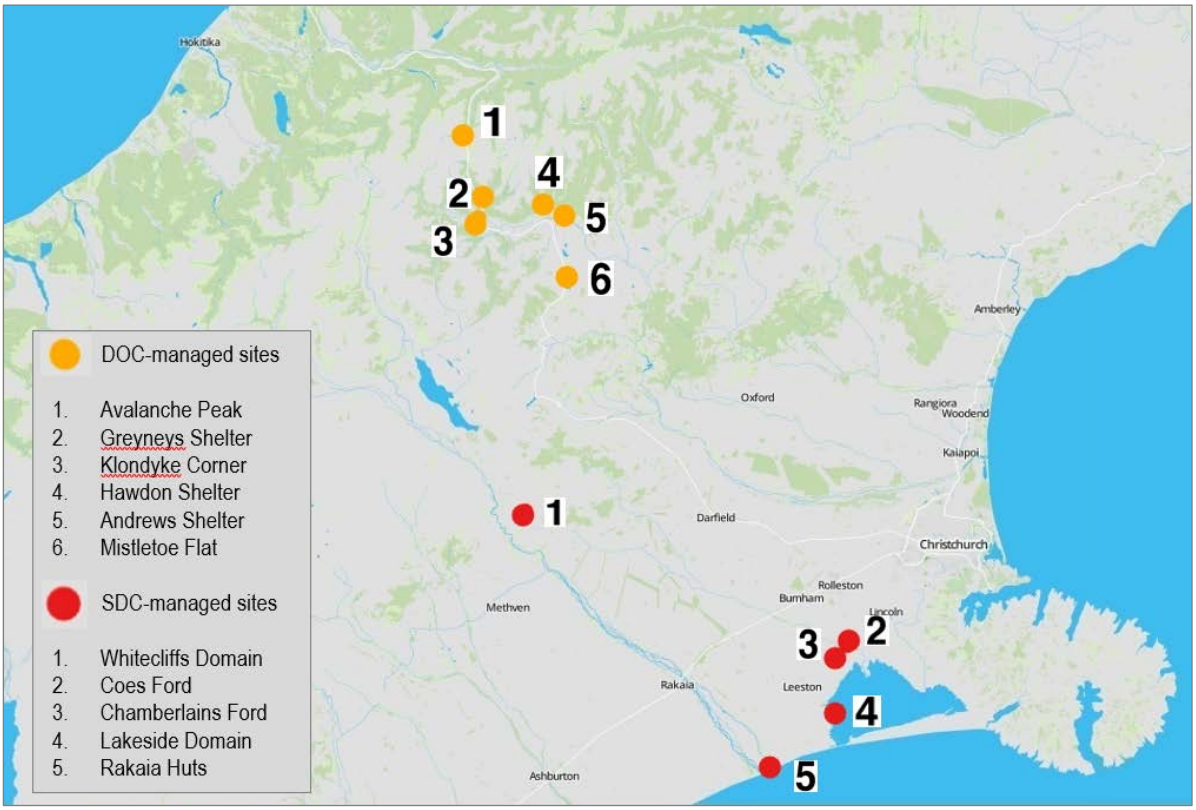
Appendix 2: Clubs and community groups involved in outdoor recreation in Selwyn

Recreational activity	Club/group details
Tramping	Christchurch Tramping Club. Federated Mountain Club Over 40s Tramping Club (OFTC).
Rogaine/orienteering	Peninsula and Plains Orienteering.
Geocaching	Geocaching.com (see Appendix 4, below, for map of geocache sites in Selwyn).
Mountain biking	Canterbury Mountain Bike Club. Craigieburn Trails. Gravity Canterbury Mountain Bike Club.
Walking (day walks, Nordic walking)	Meetup.com groups: Christchurch Wilderness Hiking, Christchurch Day Walks and Hiking (each with 1,000+ members). Walking Access Commission.
Mountaineering	NZ Alpine Club. Meetup.com: Christchurch Climbing, Mountaineering & Adventure (370 members). New Zealand Mountain Safety Council.
Rock-climbing	NZ Alpine Club. Climb NZ (coordinated by NZ Alpine Club).
Community conservation	Waimakariri Ecological and landscape Restoration Alliance (WELRA) (Wilding pine removal).
	Forest and Bird North Canterbury. Forest and Bird Ashburton.
	Waihora Ellesmere Trust.
	Kākāriki Canterbury Greenway Trust.
Hunting	Fish and Game, North Canterbury. Game Animal Council. The Sporting Shooters' Association of New Zealand (SSANZ).
Fishing	Fish and Game, North Canterbury
Kayaking/rafting/boating	Down River kayak Club. Arawa Canoe Club. JBNZ Canterbury Branch (jet-boating). Whitewater.org.nz.
Ornithology	Birds NZ, Canterbury region.
Canyoning	Kiwicanyons.org

4WD	Christchurch 4WD Club
Ski clubs (Temple Basin, Craigieburn Valley, Broken River, Olympus)	Ski Selwyn Six, skiselwynsix.co.nz Olympus: Windwhistle Winter Sports Club Craigieburn: craigieburn.co.nz Broken River: Broken River Ski Club, brokenriver.co.nz Temple Basin: templebasin.co.nz
Coast to Coast training groups	Facebook groups: Kathmandu Coast to Coast Training Group, Coast to Coast Training 2020 (each with 1,000+ members)
Trail running	Facebook group: Wild Things NZ Trail Running Club. Trailrunproject.com
Horse riding	Horses, Ponies and Gear in Canterbury Facebook page (8,000+ members).

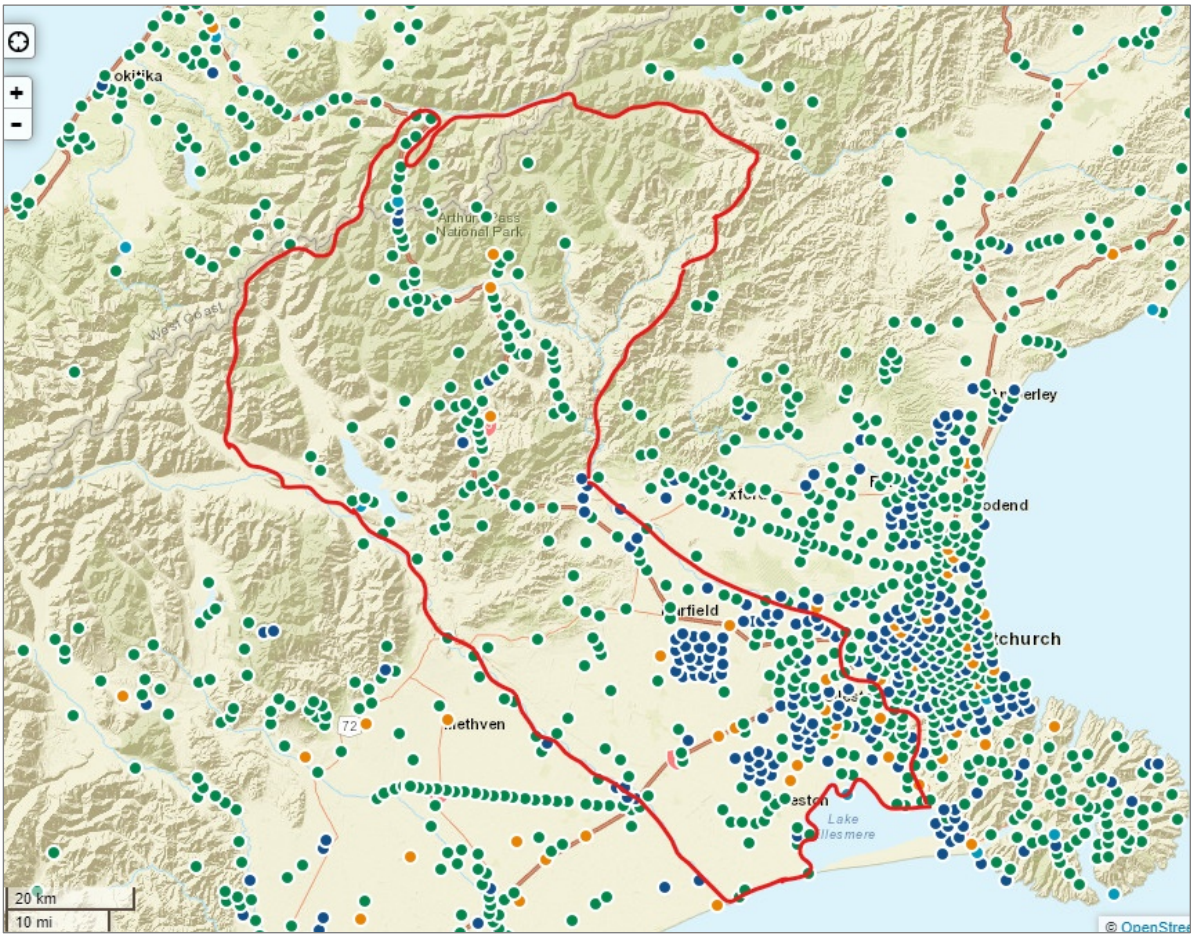
Appendix 2. Recreation activities at popular Selwyn sites

Appendix 3: Free or cheap camping sites in the Selwyn District



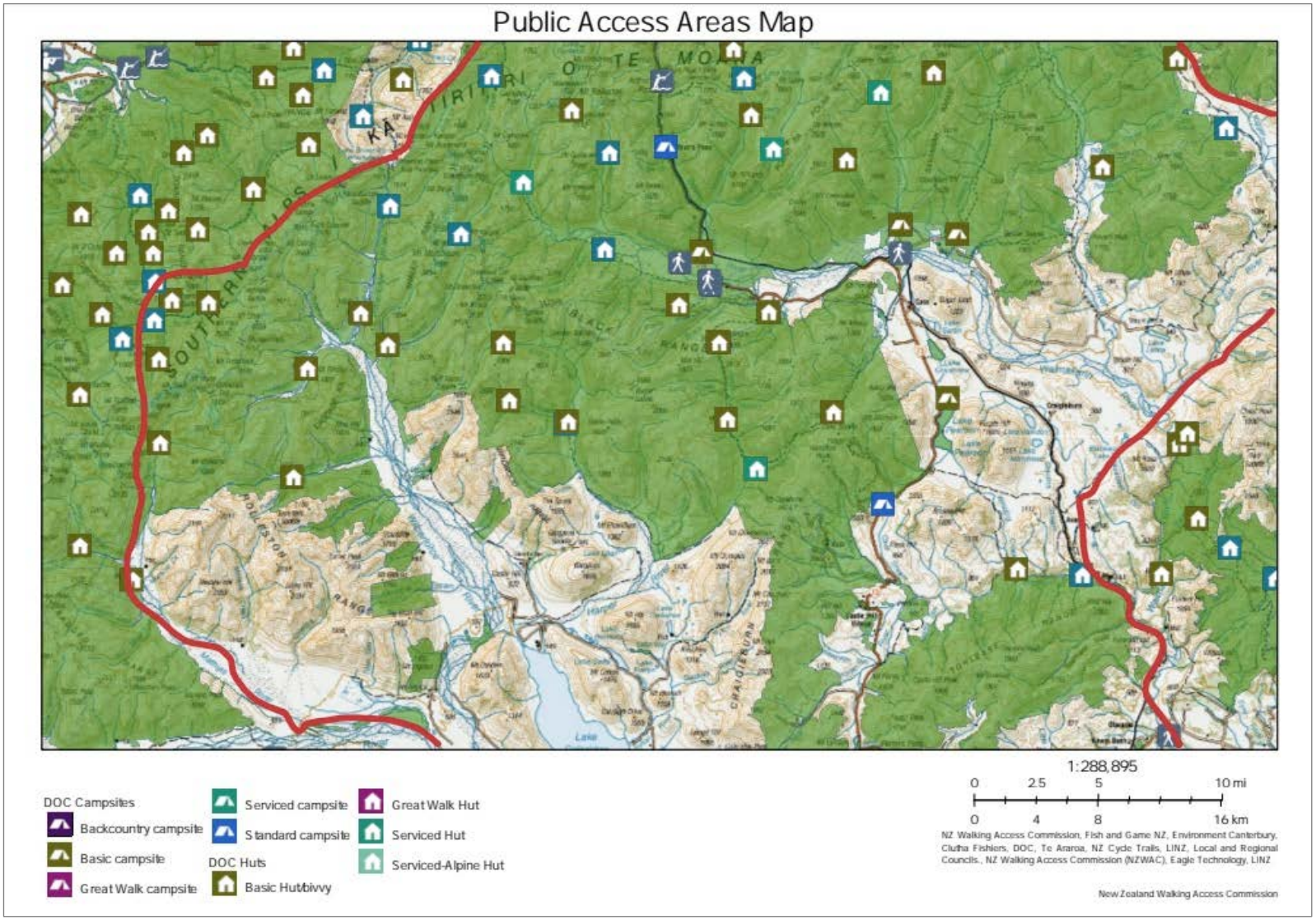
Appendix 3. DOC- and SDC-managed free or cheap camping sites in the Selwyn District (sources: Department of Conservation, 2019c; Selwyn District Council, 2019b)

Appendix 4: Selwyn geocache locations



Appendix 4. Geocache locations wihtin the Selwyn District and surrounds (source: Geocaching.com, 2019)

Appendix 5: Craigieburn Forest Park public access areas and campsites/huts



Appendix 5 Conservation land access in the Criagieburn Forest Park/Arthur's Pass areas, and hut and campsite locations (source: New Zealand Walking Access Commission, 2019)

References

Allen, L. R., Hafer, H. R., Long, P. T., & Perdue, R. R. (1993). Rural residents' attitudes toward recreation and tourism development. *Journal of Travel Research, 31*(4), 27-33. doi:10.1177/004728759303100405

Anderson, D. H., & Brown, P. J. (1984). The displacement process in recreation. *Journal of Leisure Research, 16*(1), 61-73. Retrieved from https://scholarworks.umt.edu/forest_pubs/34.

Angus and Associates. (2017). *Freedom camping literature review (Prepared for New Zealand Responsible Camping Forum)*. Retrieved from https://tia.org.nz/assets/Uploads/cd0023cf72/Freedom-Camping-Literature-Review-Report-March-2018.pdf

Arnberger, A., & Brandenburg, C. (2007). Past on-site experience, crowding perceptions, and use displacement of visitor groups to a peri-urban national park. *Environmental Management, 40*(1), 34. doi:10.1007/s00267-004-0355-8

Arnberger, A., & Haider, W. (2007). Would you displace? It depends! A multivariate visual approach to intended displacement from an urban forest trail. *Journal of Leisure Research, 39*(2), 345-365. doi:10.1080/00222216.2007.11950111

Booth, K. L., Cessford, G. R., McCool, S. F., & Espiner, S. R. (2011). Exploring visitor experiences, crowding perceptions and coping strategies on the Milford Track, New Zealand. *Science for Conservation*(313). Retrieved from https://www.doc.govt.nz/globalassets/documents/science-and-technical/sfc313entire.pdf.

Booth, K. L., & Cullen, R. (2001). *Managing recreation and tourism in New Zealand mountains*. (0276-4741). New Zealand: International Mountain Society

Booth, K. L., & Mackay, M. D. (2007). Tourism and recreation in New Zealand's natural environment: a bibliography and research synthesis. Retrieved from http://dspace.lincoln.ac.nz/bitstream/handle/10182/4264/tourism_and_recreation.pdf?sequence=1&isAllowed=y.

Brennan-Evans, K., Espiner, S., Rennie, H. G., & Nimmo, K. (2020). *Investigation of a recreation monitoring programme for Lake Ellesmere/Te Waihora*. (LEaP Report 46). New Zealand: Lincoln University

Brunt, P., & Courtney, P. (1999). Host perceptions of sociocultural impacts. *Annals of Tourism Research, 26*(3), 493-515. Retrieved from https://www.sciencedirect.com/science/article/pii/S0160738399000031.

Brunton, T. (2019). Most international visitors to New Zealand will have to pay levy from today. Retrieved from https://www.rnz.co.nz/news/national/393333/most-international-visitors-to-new-zealand-will-have-to-pay-levy-from-today

Bryan, H. (1977). Leisure value systems and recreational specialization: The case of trout fishermen. *Journal of Leisure Research, 9*(3), 174-187. doi:10.1080/00222216.1977.11970328

Budruk, M., Stanis, S. A. W., Schneider, I. E., & Heisey, J. J. (2008). Crowding and experience-use history: A study of the moderating effect of place attachment among water-based recreationists. *Environmental Management, 41*(4), 528-537. doi:10.1007/s00267-007-9059-1

Budruk, M., Wilhelm Stanis, S. A., Schneider, I. E., & Anderson, D. H. (2011). Differentiating place attachment dimensions among proximate and distant visitors to two water-

based recreation areas. *Society & Natural Resources, 24*(9), 917-932. doi:10.1080/08941920.2010.495975

Burns, R. C., Arnberger, A., & von Ruschkowski, E. (2010). Social carrying capacity challenges in parks, forests, and protected areas: An examination of transatlantic methodologies and practices. *International Journal of Sociology, 40*(3), 30-50. doi:10.2753/IJS0020-7659400302

Cessford, G. (1997). Visitor satisfactions, impact perceptions, and attitudes toward management options on the Kepler Track. *Department of Conservation Science for Conservation, 70*. Retrieved from https://www.doc.govt.nz/globalassets/documents/science-and-technical/sfc070.pdf.

Cessford, G. (2000). *Noise impact issues on the Great Walks of New Zealand.* Paper presented at the 2000. Wilderness science in a time of change conference—Volume 4: Wilderness visitors, experiences, and visitor management; 1999 May 23–27; Missoula, MT. Proceedings RMRS-P-15-VOL-4. Ogden, UT: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 69-76.

ChristchurchNZ. (2019). Freedom camping in the Canterbury region. Retrieved from https://www.christchurchnz.com/getting-around/freedom-camping-in-the-canterbury-region/

Clough, P. (2013). The value of ecosystem services for recreation. In J. R. Dymond (Ed.), *Ecosystem services in New Zealand: Conditions and trends* (pp. 330-342). New Zealand: Manaaki Whenua Press.

Conservation Act, (1987). New Zealand Government

Cosgriff, M., Little, D. E., & Wilson, E. (2009). The nature of nature: How New Zealand women in middle to later life experience nature-based leisure. *Leisure Sciences, 32*(1), 15-32. doi:10.1080/01490400903430822

Department of Conservation. (1996). *Visitor Strategy*. Retrieved from https://www.doc.govt.nz/Documents/about-doc/role/policies-and-plans/visitor-strategy.pdf

Department of Conservation. (2014). *Voting with their feet: Use of recreation sites on public conservation land and waters by New Zealanders*. New Zealand: Department of Conservation Retrieved from https://www.doc.govt.nz/globalassets/documents/about-doc/role/visitor-research/voting-with-their-feet-2014.pdf

Department of Conservation. (2019a). *Arthur's Pass Visitor Centre figures [provided by DOC]*.

Department of Conservation. (2019b). *Counter reports*. Retrieved from http://counterreports.doc.govt.nz

Devlin, P., Corbett, R., & Peebles, C. J. (1995). *Outdoor recreation in New Zealand: Volume 1, a review and synthesis of the research literature*. New Zealand: Department of Conservation and Lincoln University.

Espiner, S., Stewart, E., & Lizamore, C. (2017). *Recreation demand study: Te Waihora/Lake Ellesmere*. New Zealand: Lincoln University

Faulkner, B., & Tideswell, C. (1997). A framework for monitoring community impacts of tourism. *Journal of Sustainable Tourism, 5*(1), 3-28. doi:10.1080/09669589708667273

Figure.nz. (2019). Tourism expenditure in New Zealand. (CC BY 4.0). Retrieved from https://figure.nz/chart/OfFdbKzIdnKXFLx2

Freedom Camping Act. (2011). Retrieved from http://www.legislation.govt.nz/act/public/2011/0061/latest/whole.html

Gramann, J. H. (2002). *The role of crowding in visitor displacement at Mount Rainier and Olympic National Parks*. Retrieved from https://pdfs.semanticscholar.org/2849/c05cfcc4a145d159f90d00f9486dede97e5b.pdf

Greenaway, R., Cessford, G., & Leppens, J. (2007). An exploration of recreation displacement in New Zealand. *Annals of Leisure Research, 10*(2), 146-167. doi:10.1080/11745398.2007.9686759

Grieser, K., Dawson, C., & Schuster, R. (2005). *Visitor perceptions of crowding: An exploratory study in the Mohonk Preserve*. Paper presented at the Northeastern Recreation Research Symposium, Bolton Landing, NY. https://www.fs.fed.us/ne/newtown_square/publications/technical_reports/pdfs/2006/341%20papers/grieser341.pdf

Groothuis, P. A. (2010). Land use issues: The last settler's syndrome. *Journal of Agricultural and Applied Economics, 42*(2), 357-365. Retrieved from https://www.cambridge.org/core/services/aop-cambridge-core/content/view/10EC6BEB916CCF06B66052E1AC31DC48/S1074070800003503a.pdf/land_use_issues_the_last_settlers_syndrome.pdf.

Habrow, M. (2019). *Visitors as advocates: A review of the relationship between participation in outdoor recreation and support for conservation and the environment*. Retrieved from https://www.doc.govt.nz/globalassets/documents/science-and-technical/sfc333entire.pdf

Hall, T. E., & Cole, D. N. (2007). Changes in the motivations, perceptions, and behaviors of recreation users: Displacement and coping in wilderness. *Res. Pap. RMRS-RP-63. Fort Collins, CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. 37 p., 63*. Retrieved from http://winapps.umt.edu/winapps/media2/leopold/pubs/601.pdf.

Higgins, G. (Producer). (2017). 'It's a large burden on small shoulders' – tiny NZ towns struggle under weight of booming tourist numbers. Retrieved from https://www.tvnz.co.nz/one-news/new-zealand/its-large-burden-small-shoulders-tiny-nz-towns-struggle-under-weight-booming-tourist-numbers

Higham, J. E. S., Kearsley, G. W., & Kliskey, A. D. (2000). *Wilderness perception scaling in New Zealand: An analysis of wilderness perceptions held by users, nonusers and international visitors*. Paper presented at the Wilderness science in a time of change conference, Montana. Retrieved from. https://www.fs.fed.us/rm/pubs/rmrs_p015_2/rmrs_p015_2_218_222.pdf

Infometrics. (2019). Infometrics: Regional economic reporting. Retrieved from https://ecoprofile.infometrics.co.nz

Ipsos. (2016). *Full report: Survey of New Zealanders (Report prepared for the Department of Conservation)*. Retrieved from www.doc.govt.nz/Documents/about-doc/role/visitor-research/survey-of-new-zealanders-2016.pdf

Jurowski, C., & Gursoy, D. (2004). Distance effects on residents' attitudes toward tourism. *Annals of Tourism Research, 31*(2), 296-312. doi:10.1016/j.annals.2003.12.005

Kearsley, G., & Coughlan, D. (1999). Coping with crowding: Tourist displacement in the New Zealand backcountry. *Current Issues in Tourism, 2*(2-3), 197-210. doi:10.1080/13683509908667851

Kuentzel, W. F., & Heberlein, T. A. (2003). More visitors, less crowding: Change and stability of norms over time at the Apostle Islands. *Journal of Leisure Research, 35*(4), 349-371. doi:10.1080/00222216.2003.11950001

Kyle, G., Graefe, A., Manning, R. E., & Bacon, J. (2004). Effects of place attachment on users' perceptions of social and environmental conditions in a natural setting. *Journal of Environmental Psychology, 24*(2), 213-225. doi:10.1016/j.jenvp.2003.12.006

Lankford, S. V., Pfister, R. E., Knowles, J., & Williams, A. (2003). An exploratory study of the impacts of tourism on resident outdoor recreation experiences. *Journal of Park & Recreation Administration, 21*(4). Retrieved from http://blogs.bgsu.edu/brookac/files/2010/11/research-article1.pdf.

Liu, J. C., & Var, T. (1986). Resident attitudes toward tourism impacts in Hawaii. *Annals of Tourism Research, 13*(2), 193-214. Retrieved from https://www.sciencedirect.com/science/article/pii/016073838690037X.

Lovelock, B., Farminer, A., & Reis, A. C. (2011). *A synthesis and gap analysis of research on visitors to public conservation areas in New Zealand 1995–2010*. Retrieved from https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap254.pdf

Lovelock, B., Lovelock, K., Jellum, C., & Thompson, A. (2012). Immigrants' experiences of nature-based recreation in New Zealand. *Annals of Leisure Research, 15*(3), 204-226. doi:10.1080/11745398.2012.716618

MacKay, K. J., & Campbell, J. M. (2004). A mixed-method approach for measuring environmental impacts in nature-based tourism and outdoor recreation settings. *Tourism Analysis, 9*(3), 141-152. doi:1083-5423/04

Manning, R. E. (2007). Visual research methods. In *Parks and carrying capacity: Commons without the tragedy* (pp. 56-76). Washington DC: Island Press.

Manning, R. E. (2011). *Studies in outdoor recreation: Search and research for satisfaction* (3rd ed.). Oregon: Oregon State University Press.

Manning, R. E., & Valliere, W. A. (2001). Coping in outdoor recreation: Causes and consequences of crowding and conflict among community residents. *Journal of Leisure Research, 33*(4), 410-426. doi:10.1080/00222216.2001.11949952

Mason, P., & Cheyne, J. (2000). Residents' attitudes to proposed tourism development. *Annals of Tourism Research, 27*(2), 391-411. Retrieved from https://www.sciencedirect.com/science/article/pii/S0160738399000845.

McCool, S. F., & Lime, D. W. (2001). Tourism carrying capacity: tempting fantasy or useful reality? *Journal of Sustainable Tourism, 9*(5), 372-388. doi:10.1080/09669580108667409

McCool, S. F., & Martin, S. R. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research, 32*(3), 29-34. doi:10.1177/004728759403200305

McGehee, N. G., & Andereck, K. L. (2004). Factors predicting rural residents' support of tourism. *Journal of Travel Research, 43*(2), 131-140. doi:10.1177/0047287504268234

McKay, H. M. (2006). *Applying the limits of acceptable change process to visitor impact management in New Zealand's natural areas: A case study of the Mingha-Deception Track, Arthur's Pass National Park.* (Masters thesis), Lincoln University,

Miller, T. A., & McCool, S. F. (2003). Coping with stress in outdoor recreational settings: An application of transactional stress theory. *Leisure Sciences, 25*(2-3), 257-275. doi:10.1080/01490400306562

Ministry of Business Innovation and Employment. (2019a). Freedom camping by international visitors in New Zealand. Retrieved from https://www.mbie.govt.nz/immigration-and-tourism/tourism-research-and-

data/tourism-data-releases/international-visitor-survey-ivs/international-visitor-survey-analysis-and-research/freedom-camping-by-international-visitors-in-new-zealand/

Ministry of Business Innovation and Employment. (2019b). International visitor survey. Retrieved from https://www.mbie.govt.nz/immigration-and-tourism/tourism-research-and-data/tourism-data-releases/international-visitor-survey-ivs/

Ministry of Business Innovation and Employment. (2019c). Ministry of Business Innovation and Employment. Retrieved from https://www.mbie.govt.nz/

Ministry of Business Innovation and Employment. (2019d). Tourism infrastructure fund: Round 3 funding recipients. Retrieved from https://www.mbie.govt.nz/immigration-and-tourism/tourism/tourism-funding/tourism-infrastructure-fund/tourism-infrastructure-fund-round-3-funding-recipients/

New Zealand Herald. (2018). Tourists ruining New Zealand's finest walk, UK newspaper says. *NZ Herald*. Retrieved from https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11981896

New Zealand Mountain Safety Council. (2017). *New Zealand Mountain Safety Council annual report 2016-17*. Retrieved from https://www.mountainsafety.org.nz/about-us/business-documents/annual-reports/

New Zealand Transport Agency. (2009). *State Highway traffic data booklet 2005-2009*. Retrieved from https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2005-2009.pdf

New Zealand Transport Agency. (2016). Visiting drivers project data insights. Retrieved from https://www.saferjourneys.govt.nz/assets/Uploads/Visiting-Drivers-Project-Data-insights-2016-FINAL.pdf.

New Zealand Walking Access Commission. (2019). Outdoor access maps. Retrieved from https://www.walkingaccess.govt.nz/our-maps/

Nielsen, J. M., Shelby, B., & Haas, J. E. (1977). Sociological carrying capacity and the last settler syndrome. *Pacific Sociological Review, 20*(4), 568-581. doi:10.2307/1388716

NZ Conservation Authority. (2017). *Briefing to the incoming Minister of Conservation 2017*. New Zealand Retrieved from https://www.doc.govt.nz/about-us/statutory-and-advisory-bodies/nz-conservation-authority/publications/briefing-to-the-incoming-minister-of-conservation-2017/

Office of the Minister of Conservation. (2018). International visitors to pay more than locals for Great Walks [Press release]. Retrieved from https://www.doc.govt.nz/news/media-releases/2018/international-visitors-to-pay-more-than-locals-for-great-walks/

Office of the Minister of Conservation. (2019). Great Walks opening day booking results [Press release]. Retrieved from https://www.doc.govt.nz/news/media-releases/2019/great-walks-opening-day-booking-results/

Pan, S., & Ryan, C. (2007). Mountain areas and visitor usage–motivations and determinants of satisfaction: The case of Pirongia Forest Park, New Zealand. *Journal of Sustainable Tourism, 15*(3), 288-308. doi:10.2167/jost662.0

Parliamentary Commissioner for the Environment. (1997). *Management of the environmental effects associated with the tourism sector*. Retrieved from https://www.pce.parliament.nz/media/1511/tourism_1997_main.pdf

Peebles, C. J. (1995). *Outdoor recreation in New Zealand: Volume 2 a bibliography*. New Zealand: Department of Conservation/Lincoln University.

Perdue, R. R., Long, P. T., & Allen, L. (1990). Resident support for tourism development. *Annals of Tourism Research, 17*(4), 586-599. doi:10.1016/0160-7383(90)90029-Q

Perera, P., Senevirathna, M. C., & Vlosky, R. P. (2015). Recreationist perspectives, attitudes, and perceptions towards national park management in Sri Lanka. *Turizam/Tourism, 63*(4), 497-514. Retrieved from https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=220847.

Roy, E. (2019, 8 March). Queenstown considers tourist levy after claim crowds 'threaten wellbeing'. *The Guardian.* Retrieved from https://www.theguardian.com/world/2019/mar/08/queenstown-considers-tourist-levy-after-claim-crowds-threaten-wellbeing

Ryan, C. (1991). *Recreational tourism: A social science perspective*. United Kingdom: Routledge.

Sæþórsdóttir, A. (2004). Adapting to change: Maintaining a wilderness experience in a popular tourist destination. *Tourism Today*. Retrieved from http://citeseerx.ist.psu.edu/B225887A-6DB2-4029-BBBA-8A5476CE112C/FinalDownload/DownloadId-9B0AA93BB2606DF922E551EEA291CD98/B225887A-6DB2-4029-BBBA-8A5476CE112C/viewdoc/download?doi=10.1.1.459.6906&rep=rep1&type=pdf#page=53.

Sæþórsdóttir, A. (2010). Planning nature tourism in Iceland based on tourist attitudes. *Tourism Geographies, 12*(1), 25-52. doi:10.1080/14616688.2010.531043

Sæþórsdóttir, A. (2013). Managing popularity: Changes in tourist attitudes in a wilderness destination. *Tourism Management Perspectives, 7*, 47-58. doi:10.1016/j.tmp.2013.04.005

Sæþórsdóttir, A., Hall, C. M., & Saarinen, J. (2011). Making wilderness: Tourism and the history of the wilderness idea in Iceland. *Polar Geography, 34*(4), 249-273. doi:10.1080/1088937X.2011.643928

Schneider, I. E. (2007). The prevalence and significance of displacement for wilderness recreation management and research. *International Journal of Wilderness. 13 (3): 23-27.* Retrieved from http://winapps.umt.edu/winapps/media2/leopold/pubs/619.pdf.

Schroeder, S. A., & Fulton, D. C. (2010). Land of 10,000 lakes and 2.3 million anglers: Problems and coping response among Minnesota anglers. *Journal of Leisure Research, 42*(2), 291-315. doi:10.1080/00222216.2010.11950206

Selwyn District Council. (2009). *Chamberlains Ford management plan*. Retrieved from https://www.selwyn.govt.nz/recreation-And-facilities/parks-And-reserves/plans-and-policies/reserve-management-plans

Selwyn District Council. (2015a). *Long term plan 2015-2025: 30-year infrastructure strategy*. Retrieved from https://www.selwyn.govt.nz/__data/assets/pdf_file/0004/170824/Infrastructure-Strategy.pdf

Selwyn District Council. (2015b). *Open spaces strategy*. Retrieved from https://www.selwyn.govt.nz/__data/assets/pdf_file/0009/175905/Selwyn-District-Council_Open-Space-Strategy_reduced.pdf

Selwyn District Council. (2017). *Freedom camping report*. Retrieved from https://www.selwyn.govt.nz/recreation-And-facilities/parks-And-reserves/freedom-camping

Selwyn District Council. (2019). *Annual plan 2019/20*. Retrieved from https://www.selwyn.govt.nz/__data/assets/pdf_file/0019/304381/SDC_AP-2019_Document_WEB.PDF

Sharpe, A. G. (1999). *Displacement of New Zealand trampers from the Great Walks track network, New Zealand.* (Unpublished Dissertation for Parks, Recreation, and Tourism Management Post-graduate Diploma), Lincoln University, New Zealand, Retrieved from https://researcharchive.lincoln.ac.nz/handle/10182/3294

Sport NZ. (2017). *The value of sport and active recreation to New Zealanders*. Retrieved from New Zealand: https://sportnz.org.nz/assets/Uploads/Angus-Associates-Value-of-Sport-FINAL.pdf

Strickland-Munro, J. K., Allison, H. E., & Moore, S. A. (2010). Using resilience concepts to investigate the impacts of protected area tourism on communities. *Annals of Tourism Research, 37*(2), 499-519. doi:10.1016/j.annals.2009.11.001

Te Araroa Trail. (2020). Te Araroa Trail Retrieved from https://www.teararoa.org.nz/

Thompson-Carr, A. (2012). Aoraki/Mt Cook and the Mackenzie Basin's transition from wilderness to tourist place. *Journal of Tourism Consumption and Practice, 4*(1). doi:10026.1/11585

Tourism Industry Aotearoa. (2019). *Tourism 2025 and beyond*. Retrieved from https://tia.org.nz/assets/d5156c4126/Tourism2025-and-Beyond-v2.pdf

Tourism New Zealand. (2019). Tourism New Zealand: Walking and hiking. Retrieved from https://www.tourismnewzealand.com/markets-stats/sectors/special-interest/walking-and-hiking/

Tovar, C., & Lockwood, M. (2008). Social impacts of tourism: An Australian regional case study. *International Journal of Tourism Research, 10*(4), 365-378. doi:10.1002/jtr.667

Transit New Zealand. (2000). *State Highway traffic volumes*. Retrieved from https://www.nzta.govt.nz/assets/resources/state-highway-traffic-volumes/docs/SHTV-2000.pdf

UK Climbing. (2020). Castle Hill bouldering: New Zealand. Retrieved from https://www.ukclimbing.com/articles/destinations/castle_hill_bouldering_-_new_zealand-3685#:~:text=Castle%20Hill%20(and%20nearby%20Flock,famous%20and%20is%20visually%20stunning.

Valentine, P. (1992). *Nature-based tourism*. Retrieved from https://researchonline.jcu.edu.au/1632/1/Nature-based_tourism.pdf

Visser, C. A. (1995). Displacement in a backcountry setting: A qualitative study. *Unpublished Diploma for Tourism thesis. University of Otago, New Zealand*.

Whitaker, C., Stevelink, S., & Fear, N. (2017). The use of Facebook in recruiting participants for health research purposes: A systematic review. *Journal of Medical Internet Research, 19*(8), e290. doi:10.2196/jmir.7071

White, D. D., Virden, R. J., & Van Riper, C. J. (2008). Effects of place identity, place dependence, and experience-use history on perceptions of recreation impacts in a natural setting. *Environmental Management, 42*(4), 647-657. doi:10.1007/s00267-008-9143-1

Wilson, J., Espiner, S. R., Stewart, E., & Purdie, H. (2014). *'Last chance tourism' at the Franz Josef and Fox Glaciers, Westland Tai Poutini National Park: A survey of visitor experience* (LEaP 33). Retrieved from http://researcharchive.lincoln.ac.nz/bitstream/handle/10182/6319/Leap%2033-Glaciers.pdf?sequence=4&isAllowed=y

Wilson, J., & Mackay, M. D. (2015). *Otematata: A study of a rural hydro/holiday home village* (LEaP 38). Retrieved from http://researcharchive.lincoln.ac.nz/bitstream/handle/10182/6556/Leap-rr-38.pdf?sequence=3

Wilson, J., Purdie, H., Stewart, E., & Espiner, S. (2015). *Environmental change and tourism at Aoraki/Mt Cook National Park* (LEaP 41). Retrieved from https://pdfs.semanticscholar.org/8213/2659e75d7d62cc0c6099922b11408658fe66.pdf

Wray, K. (2009). *The culture of the wild: An exploration of the meanings and values associated with wilderness recreation in New Zealand.* (Doctoral thesis), Lincoln University, Retrieved from https://researcharchive.lincoln.ac.nz/bitstream/handle/10182/2372/Wray_PhD.pdf?sequence=3

Wray, K., Espiner, S., & Perkins, H. C. (2010). Cultural clash: Interpreting established use and new tourism activities in protected natural areas. *Scandinavian Journal of Hospitality and Tourism, 10*(3), 272-290. doi:10.1080/15022250.2010.496570